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Abstract

If the world is determined to destroy itself the only thing architects can do is to make sure we don’t lose our sense of touch. (Ando, 1995, p. 480)

Much has been written on the ocularcentrism or visual bias of western society and the effect it has upon our perceptual faculties.¹ This is particularly evident within the architectural discourse where this prioritising of vision if often cited as instigating scenographic² or retinal architecture³: a superficial construction of images intended to be seen rather than immersive atmospheres to be felt. The recent rash of iconic structures and stactical spectacles that arose during the New Global Era (1992-2008)⁴ has done little to mitigate this.

It has been argued that this rise in visuality is comorbid with a denigration of the somatic and non-visual senses, and in particular, our sense of touch.⁵ Consequently some thinkers have posited that a tactile⁶ or haptic⁷ approach may offer a more meaningful alternative. This proposition is the starting point of my thesis, as I ask (how) can a more-than visual architecture generate more touching experiences?

Drawing upon the tactual phenomenologies of Husserl, Heidegger, and Merleau-Ponty I introduce the concept of haptic-visual⁸ and synaesthetic perception⁹ to explain how vision (and our other senses) may be considered tactual. Moreover, I argue that our sensory perceptions are empathetically felt in, with, and through our felt/feeling bodies (Leib).¹⁰ This feeling is our attunement – a product of our own affective disposition and the atmosphere that is generated by the hermeneutical background of our current situation (historical, geographical, cultural, etc.)¹¹ – and is quintessentially more-than visual. This has necessitated the development of a felt-phenomenology in order to articulate the embodied richness of our tactual encounters. Which is to say, how architecture makes us feel.

It is my contention that, only by recognising the reciprocal and participatory relationship that exists between atmospheric affect and our phenomenological bodies, may we begin to appreciate the manifold ways in which we touch, and are touched, by our built environment.

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² Frampton (2002 [1990], 2011a, 2011b)
³ Pallasmaa (2008 [1996], 2012 [2010]-a)
⁴ Adam (2012)
⁵ Mark Paterson for instance, maintains that there has been a “concomitant neglect for the haptic,” or simply, a “forgetting of touch” (Paterson, 2007b, p. 8)
⁶ Frampton (1981, 1985)
⁷ Pallasmaa (2011b, 2012 [2000])
⁹ This notion of atmospheric attunement is adopted from Heidegger (1996 [1962], pp. xv, 126-134), and advanced by proponents of the New Phenomenology (Neue Phänomenologie), namely Herman Schmitz (2002, 2014) and Gernot Böhme (2017)
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Introduction: Touching architecture

A corpus isn't a discourse, and it isn't a narrative. So a corpus is what we'd need here. Here, there is something like the promise that this must involve the body, shall involve it, almost immediately [...] Bodies, for good or ill, are touching each other upon this page, or more precisely, the page itself is a touching (of my hand while it writes, and your hands while they hold the book). This touch is infinitely indirect, deferred-machines, vehicles, photocopies, eyes, still other hands are all interposed - but it continues as a slight, resistant, fine texture, the infinitesimal dust of a contact, everywhere interrupted and pursued. In the end, here and now, your own gaze touches the same traces of characters as mine, and you read me, and I write you.

- Jean-Luc Nancy, Corpus

Context: why touch?

Touch is our most phenomenologically primal and fundamental sense. The first to develop and the last to leave us, it is our oldest sense and the one in which we put the most trust. Unique among the senses, “touch alone [...] perceives directly in and through itself” (Aristotle, 1907, 435a). Indeed, “touch is the sense that makes sense possible, that without which we cannot sense, cannot know anything sensible.” (Ross, 1998, p. 51). It is because of our sense of touch that we are even able to sense ourselves and have a sense of reality (Ratcliffe, 2013). It is perhaps unsurprising therefore, that touch should be described as “the busiest of all our senses” (Locke, 1836 [1700]).

What is surprising, given all of the above, is the notion that we have forgotten how important touch is to us and how significantly it affects our perception of ourselves and our world. This sensory omission is not limited to a single discipline but has been identified across the gamut of humanities and social sciences. This forgetting of touch can also be readily encountered in academic language where there is an expectation for taking a detached and objective view of a situation (rather than a more direct, hands-on approach), to shed light on the subject (rather than weighing up ideas and grasping concepts), and to show a point of view (rather than taking a stand) (Classen, 1993, 2005).

In the introduction to his own doctoral thesis, the American architect, Charles Moore, wrote that “Dissatisfaction is the provocation for every thesis – dissatisfaction, and the hope that the discovery, organisation and possibly creation of ideas might do something to improve this situation.” (C. W. Moore,

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11 (Frampton, 2011 [1985]; Paterson, 2005)
12 (Candlin, 2010; Classen, 2005; Field, 2003 [2001]; Rodaway, 2011 [1994])
The dissatisfactions that provoked this thesis are a direct response to the forgetting of touch in contemporary architecture. This extends beyond a discontent for the aestheticisation of architecture and pernicious practice of spectacularisation, to the paucity of scholarly literature on the matter, its effects upon us, and how these might best be remedied. As Kenneth Frampton notes, the very fact that “we find it necessary to remind ourselves that the tactile is an important dimension in the perception of the built form” is in and of itself a damning indictment of just how great our ocular obsession has become (Frampton, 1981, 1985).

Moore is significant in this regard, as one of a few architects that have actively championed the role of the body and the non-visual senses in architectural perception. In his collaborative text, *Body, Memory, and Architecture*, Moore draws upon parallel fields (of philosophy, environmental and developmental psychology, human geography, and anthropology) to help architects to look beyond the visual and quantitative considerations, in order to recognise the most fundamental concern: how it makes us feel – how we are moved, affected, or touched (Bloomer & Moore, 1977). Accordingly, this means “experiencing it [architecture] with *all* the senses” (Bloomer & Moore, 1977, p. 138):

> Certainly if we continue to focus radically on external and novel experiences and on the sights and sounds delivered to us from the environment to the exclusion of renewing and expanding our primordial haptic experiences; we risk diminishing our access to a wealth of sensual detail developed within ourselves [...which] form[s] the core of our human identity. (Bloomer & Moore, 1977, p. 44)

Moore is by no means the first to make such observations. Twenty years earlier, the Danish architect and writer, Steen Rasmussen, argued for a more multisensory appreciation of architecture (Rasmussen, 1964). For “it is not enough to see architecture; you must experience it,” as it is only through this embodied experience that we may “sense the atmosphere [...] breath the air of the place [and] hear its sounds” (Rasmussen, 1964, pp. 33, 40).

This sentiment has also been echoed by Frampton, who often voiced his anxieties for the growing fracture emerging between the way in which architecture was being perceived and experienced: a pronounced dualism between the visual and the tactile that corresponded to a “distancing” from our environment and “a loss of nearness” (Frampton, 1985, p. 29). Frampton posits that this ontological impoverishment may be rectified by adopting a more *tactile* strategy.

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13 And concurrently, why much of contemporary architecture seems incapable of moving us (Bloomer & Moore, 1977, p. 61)

14 This *loss of nearness* should not be misunderstood as an increase in some form of quantifiable relationship between two objects in space, but rather as an “impoverishment of intimacy” (Frampton, 1981). This notion is borrowed from Heidegger, who employs it in reference to the way we relate to the world around us, which is to say, the spatiality of Dasein (Heidegger, 1996 [1962], pp. 94-102)
Frampton’s conception of the tactile extends well beyond the limited sensations of cutaneous touching, however, and includes “a whole range of complementary sensory perceptions which are registered by the labile body”:

[...] the intensity of light, darkness, heat and cold; the feeling of humidity; the aroma of material; the almost palpable presence of masonry as the body senses its own confinement; the momentum of an induced gait and the relative inertia of the body as it traverses the floor; the echoing resonance of our own footfall. (Frampton, 1985, p. 28)15

This twofold mode of architectural perception may be traced back to Walter Benjamin, from whom Frampton quotes at length (Frampton, 2002 [1981], p. 279). In this passage16 Benjamin affirms that it is through a combination of tactility (as habit and distraction) and vision (as attentive concentration) that we apprehend our built environment (W. Benjamin, 2007 [1936]). In a similarly Benjaminian tone,17 Frampton allies vision with information, and tactility with experience. Using the television set as a metaphor for postmodern architecture – “a machine of information rather than experience” – Frampton bemoans the growing tendency of the time to “deliberately neglect” the body by appealing exclusively to the eyes (Frampton, 2004, p. 220).18 Critically, Frampton does not call for a tactual-bias,19 but rather redistribution of sensation: less emphasis on appearances, more on feelings and non-visual experiences.

The sensory dichotomy is thereby inadvertently sustained by Frampton through the architectural implications of both sight and tactility. Accordingly a prioritising of the visual is demonstrated by a proclivity for the superficiality of scenography and the production of “gratuitous sculptural gestures” (Frampton, 2002 [1998], p. 253). While a tactile sensibility remains for the most part, only loosely defined through rather florid and inclusive descriptions (as above) or simply through inference in its opposition to visuality.20

Aside from this Frampton offers little further elaboration on the topic.21

But despite Frampton’s attempts to articulate his discontent, the rise in visuality continued, and the notion of tactility threatened to disappear into phenomenological obscurity until it was picked up again a decade later in an issue of Architecture and Urbanism, where Alberto Pérez-Gómez, Steven Holl, and Juhani

15 This holistic appreciation for the full phenomenological experience of tactility or hapticity, has been reiterated more recently by Malgrave (2011, p. 203)
16 (W. Benjamin, 2007 [1936], p. 240). See also Brandscapes and body-ballets in Chapter One
17 For Benjamin, any artefact or performance created through human gesture was an act of communication (storytelling) whereas anything produced by a machine was simply information. See in particular, W. Benjamin (2002 [1936]-a, pp. 149-150) and Brand (2013)
18 See also Jean-Francois Lyotard’s response to Frampton’s essay (Lyotard, 2004)
19 I shall adopt the term ‘tactual’ as Fulkerson does, “as a general term to refer to any form of touch experience” (Fulkerson, 2014, p. 12), whilst the term ‘tactile’ will be reserved for passive touch, and ‘haptic’ a more inclusive and synaesthetic form of touch to be developed and discussed in Chapters Two and Three.
20 Definitions such as “The tactile favours the concrete experience and is antithetical to simulation and postponement” (Frampton, 1981)
21 For an adequate summary of Frampton’s sensorial distinctions in respect to architectural perception, see Shirazi (2014)
Pallasmaa would once again address these significant questions of architectural perception (Holl, Pallasmaa, & Pérez-Gómez, 1994).

Reviving the corpus of architectural phenomenology, these authors proclaim that architects must find a way to combat “the dangers of aestheticism, reductive functionalism and either conventional or experimental formalism” (Pérez-Gomez, 1994, p. 23), and that there is a desperate need for more meaningful and significant architectural experiences in everyday life. This is reinforced by Pallasmaa who maintains that “the architecture of our time is turning into the retinal art of the eye,” resulting in “a disappearance of the physical, sensual and embodied essence of architecture” (Pallasmaa, 1994, p. 29).

Like Frampton, Pallasmaa also advocates for a more than visual “reaction to ocular-centrality,” one that “offers nearness and affection” and a greater appreciation for “materiality, tactility, and intimacy.” (Pallasmaa, 2012 [1998], p. 194). Thus, it is with Framptonian vociferousness, Pallasmaa asserts that…:

Our culture of control and speed has favoured the architecture of the eye, with its instantaneous imagery and distanced impact, whereas haptic architecture promotes slowness and intimacy, appreciated and comprehended gradually [...] The architecture of the eye detaches and controls, whereas haptic architecture engages and unites. Tactile sensibility replaces distancing visual imagery through enhanced materiality, nearness, and intimacy. (Pallasmaa, 2012 [2000], p. 323)22

While each of the figures discussed remains laudable for their critique of visually-biased architecture and their championing of a more tactile or haptic approach, each is guilty of failing to follow through with a more substantial elaboration of their thesis, thereby ensuring that this tactual theory remains a tentative speculation.

It is precisely this dissatisfaction that precipitated this thesis, and a desire for a more comprehensive and satisfactory explanation of how a more-than visual approach to architecture may yet counter “the current tendency to reduce architecture to scenography” (Frampton, 2002 [1990], p. 91), and “return architecture [...] to a more concrete and tactile poetic” (Frampton, 1981, p. 57). Or differently put, (how) can a more-than visual architecture generate more touching experiences?

It therefore remains “a worthwhile task” within architecture, “to re-examine the experience of built spaces from a more-than visual perspective, one that attends to a range of sensory-somatic and affective experiences that include, but crucially are not limited to, the visual.” (Paterson, 2011, p. 263).

Interdisciplinary

The present impoverishment of theory and criticism on the subject of touch and architecture, has necessitated a broader, more inter-disciplinary approach. It is, of course, not uncommon for thinkers to

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22 For variations, see also Pallasmaa (2012 [1998], 2012 [2010]-b)
employ and develop ideas from other disciplines. Merleau-Ponty, for instance, frequently references the artistic works of Paul Cézanne and Auguste Rodin, as well as the psychological studies of David Katz’s (2013 [1925]) and Jean Piaget (2013 [1943]). 23 Today this sharing of knowledge is even more explicit with the adoption of neurological research from across the arts and humanities, 24 as well as publications and conferences intended to combine thinkers from a variety of intellectual backgrounds for the purpose of furthering discussion on a particular topic. 25

Even the term ‘haptic’ has an interdisciplinary history. Originally conceived in psychology (Max Dessoir), it has since been adopted by art historians (Alois Riegl), writers (Walter Benjamin), philosophers (Gilles Deleuze), architects (Charles Moore, Kent Bloomer and Juhani Pallasmaa), media theorists (Laura Marks, Giuliana Bruno), geographers (Paul Rodaway, Mark Paterson), and anthropologists (Tim Ingold).

It is not an uncommon approach in architecture either – a practice whose interdisciplinary credentials may be found as far back as one century BC, when the Roman architect Vitruvius wrote that in addition to being a skilful draftsman, the architectural student should also be well versed in geometry and mathematics, law, history, philosophy, music, medicine, astronomy and astrology (Vitruvius, 1914 [25BC]). It is now widely accepted that the language of architecture can be enriched by cross-pollinating with research from other disciplines (Crysler, Cairns, & Heynen, 2012). Hence, today we accept a more inclusive (Vitruvian) definition of architecture:

Architecture is not (just) art. Architecture is not (just) science. Architecture is not (just) engineering. But also: architecture is not (just) building. Architecture is not (just) planning. Architecture is not (just) organization. Architecture is not (just) politics. Architecture is not (just) psychology. Architecture is not (just) philosophy. Architecture is not (just) semiotics. Architecture is not (just) fashion or just another medium of lifestyle or branding. These are not my claims – these are architecture’s claims. (Schumacher, 2011, p. 145)

I have therefore sought ideas on the topic of touch, affect and embodied perception from a range of parallel disciplines. These are drawn on as necessary during the discussion of various topics. Chapter Two for instance, concerns the evolution of our sensorium vis à vis our bodies and our habitats. Research from anthropology, ethnography, and sensory studies has been invaluable in supporting and developing my ideas in this area. Similarly, one of the topics discussed in Chapter Four concerns empathetic perception. In

23 See Merleau-Ponty (1964, 2004, 2005 [1945])
25 Such as Bille and Sørensen (2016); Cowan and Steward (2007); Diaconu, Heuberger, Mateus-Berr, and Vosicky (2011); Gallace and Spence (2014); Mindrup (2015b); Pallasmaa, Mallgrave, and Arbib (2013); Pallasmaa, Mallgrave, Robinson, and Gallace (2015); Radman (2013) as well as the various sensory readers, (Buchli, 2002; Bull & Back, 2003; Drobnick, 2006; Gregg & Seigworth, 2010; Howes, 2005d; Mirzoeff, 2002)
this instance I drew heavily from recent neurological studies, as well as nineteenth century theories in art history and moral philosophy. The particular subject areas covered will become evident from the topics discussed in each chapter. A full and comprehensive account of these sources is included in the references.

Significance

The relevance of this research is readily apparent from the scarcity of material on the tactility or hapticity of architecture (as outlined above), but its significance to the current architectural discourse is evident on three fronts: firstly, in the rise in the number of scholars voicing their irritations with superficial architecture and its disquieting effects (such as the deterioration of a sense of place and the concurrent increase of social anxieties, distress and disorders). Secondly, this thesis may be seen as part of the recent “sensory turn” that is currently being experienced across a number of disciplines (Howes, 2003). This paradigm-shift is part of a more hands-on pedagogical approach to knowledge acquisition in contradistinction to the hands-off empiricism engendered by the teachings of Descartes and Enlightenment. And thirdly, I draw upon recent research from the nascent fields of cognitive and neuroscience regarding how we perceive and experience the world around us, including empathy theory and synaesthetic perception. All of which have proven particularly valuable to an elaboration on the importance of architectural atmospheres, and the articulation a more-than visual perception of the built environment. These findings have also gone a long way to substantiating the claims of phenomenologists, and the natural attitude of always-already Being-in-the-world (a condition that was recently restated in terms of the 4E’s: embodied, embedded, extended and enactive cognition). This last point is of particular import, as it also galvanises the central tenet of my felt-phenomenology; that to touch is to be touched, moved and affected, such that inhabitant and habitat are understood as reciprocal terms. Thus, the time

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27 For an overview of how our sensory perception has changed and how it is influencing current practices, see Diaconu, et al. (2011); Howes (1991, 2005d); Howes and Classen (2014); Pérez-Gómez (1983); Pink (2009); Pink and Howes (2010); M. M. Smith (2007)

28 For an explanation of the former, and its relation to architecture, see Chapter Four, as well as Gallese (2015); Mallgrave (2015a); Pallasmaa (2015a); Wagner (2014 [2009]). For the latter, see Chapter Three, and in particular, Böhme (2013e); Campen (2011); Frascari (2003); Howes (2006)

29 See Chapter Four

30 See for instance, the emergence of groups such as the Academy of Neuroscience for Architecture, and forums like ambiances.net (whose associated publication is “Ambiances: International Journal of Sensory Environment, Architecture and Urban Space”), as well as a raft of recent interdisciplinary publications concerning the relationship between these topics and our embodied experience of the built environment: Bille and Sørensen (2016); Diaconu, et al. (2011); Gallace and Spence (2014); Löschke (2016); Mindrup (2015b); Pallasmaa, et al. (2013); Pallasmaa, et al. (2015); Radman (2013); Robinson and Pallasmaa (2015); H. Steiner and Sternberg (2015)

31 See Menary (2010); Zahavi and Michael (2016)

32 This principle of environmental reciprocity has been reiterated many times by humanists, ecologists, psychologists and phenomenologists, including Bloch (1979); Churchill (1974); Frascari (2011); J. J. Gibson (1968); Hall (1990 [1966]);
is now ripe for reconsidering not only how we perceive and experience architecture, but concurrently, how our perceptions and experiences are themselves shaped by our environment (Mallgrave, 2013a).

Methods of inquiry: towards a felt-phenomenology

Phenomenology – as “the study of essences” (Merleau-Ponty, 2005 [1945], p. vii) – has always been directly concerned with the role of the body in the act of perception, sensation, and affect:

Any object, event, situation or experience that a person can see, hear, touch, smell, taste, feel, intuit, know, understand, or live through is a legitimate topic for phenomenological investigation. There can be a phenomenology of light, of color, of architecture, of landscape, of place, of home, of travel, of seeing, of learning, of blindness, of jealousy, of change, of relationship, of friendship, of power, of economy, of sociability, and so forth. All of these things are phenomena because human beings can experience, encounter, or live through them in some way. (Seamon, 2000, pp. 158-159)


To this day, phenomenology remains the most appropriate mode of analysis for this body of research,33 presupposing as it does, the reciprocity of Being (as Dasein) that is at the heart of what it means to touch and be touched.34

It is interesting to note that the etymological root of sense, sentiment and sentient comes from the Latin, sentire, meaning to feel. But this feeling, like touching, is polysemic, referring not simply to the action of making cutaneous contact, but to the broader experience of feeling oneself as situated in this place, in this body, and in this affective state – what Heidegger termed, our “attunement” (Heidegger, 1995 [1983]).35

Similarly, this thesis is not limited in scope to those elements of architecture that we touch with our hands or feet, but to the manifold forms of touch. Accordingly, this research is critically focused on how we are touched, moved or affected by our architectural encounters. A phenomenology of touch would endeavour to describe the quality of tactual encounters and sensations, and the significance that these moments of physical contact have for us. In addition to this, a felt-phenomenology36 also recognises how our affective

Rasmussen (1964). It is only recently, however, that it is being taken seriously as an encompassing biological theory known as niche constructionism (Mallgrave, 2015a, p. 23).

33 (Macarthur & Stead, 2012; Otero-Pailos, 2012; Paterson, 2007b)
34 For more on the architectural applications of a phenomenological approach, see Crysler, et al. (2012); Groat and Wang (2013, pp. 227-234); Seamon (1987, 2000, 2010)
35 On attunement and architecture, see Chapter Four, and Pérez-Gómez (2016). For a general discussion on Heidegger, moods, and the attunement of places, see H. L. Dreyfus (2012); Guignon (2003); Pérez-Gómez (2015); Ratcliffe (2002, 2009a, 2009b)
36 Adapted from Paterson (2007a, 2007b)
states come to tincture our perceptions, as well as the way we use and experience our bodies and our environment. A felt-phenomenology is therefore concerned with all the ways in which an object, person, situation or place is felt in, with, and through our phenomenal bodies (Leib).37

The capacity our environment has in shaping our perceptual faculties was also a central theme for Benjamin’s criticisms of contemporary culture:

Just as the entire mode of existence of human collectives changes over long historical periods, so too does their mode of perception. The way in which human perception is organised – the medium in which it occurs – is conditioned not only by nature but by history. (W. Benjamin, 2002 [1936]-b, p. 104) 38

Key to much of Benjamin’s thinking was the notion of a “synchronicity” (Jennings, 2008, p. 5) that exists between the present and particular moments in the past that directed us down the path to our current situation. This Benjaminian technique of “problematis[ing] the now of the present” (Hartoonian, 2010, p. 2) invites a more anthropological investigation39 – reviewing the past in a new light in search of answers to contemporary questions (Simay, 2005). This has proven to be an effective methodology, particularly in the first three chapters, where I show how issues surrounding our current disposition have become so engrained and normalised through inherited practices and predilections. This includes, for instance, the pentomic taxonomy of the senses in Western society (inherited from Aristotle), and goes some way to explaining the difficulty we have elucidating our manifold tactual sensations – solidity, mass, texture, form, proprioception, frribility, relative temperature, gravity, viscosity etc. – as a single term: touch.

Perhaps better understood today as something like critical theory, this sensory anthropology40 or haptic historiography, enables me to stretch beyond the confines of the established field “to achieve a more integrative theoretical stance” (Groat & Wang, 2013, p. 92); a kind of theoretical work that “provides a chance to reflect upon what is there, but also to imagine something different – to question and transform rather than describe and affirm.” (Rendell, 2004, p. 145).

Chapter Five, however, returns to a purely phenomenological approach: a combination of first-person (experiential) and hermeneutical accounts (Seamon, 2000). In this chapter I draw upon my felt-phenomenology (developed in the preceding chapters) to investigate the ways in which touching

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37 For a distinction between our phenomenal lived-body (Leib) and our material, corporeal body (Körper), see Chapter Two, as well as Husserl (2000 [1952]); Schmitz (1966)
38 Which Benjamin developed from an interest in Moholy-Nagy’s theorisation of the concomitant relationship between technology, new media, and the human sensorium (Jennings, 2008). Additionally, “This is where [...] the new urban anthropology of the senses, with its emphasis on discerning the meanings and politics of perception, has a key role to play in taking the sensorial revolution in architecture a step further” (Howes, 2005a)
39 The objective of which is “to seek a generous, comparative but nevertheless critical understanding of human being and knowing in the one world we all inhabit” (Ingold, 2007, p. 69). See also Howes (1991) and Pink and Howes (2010)
40 (Howes, 1991, 2005a; Pink & Howes, 2010)
architectural atmospheres are deliberately created by certain architects. This involved a critical analysis of their creative process, writings, and illustrations, as well as a description of the lived experience that I felt during my habitation of these buildings.41

Scope and limitations

Writing about architecture and perception is inevitably haunted by the question, Can we see through the word into built form? (Holl, et al., 1994, p. 40)

Of the limitations imposed on this thesis, the most obvious is the necessary abstraction of first-person embodied experience into text. Even the capacity adequately to express the subtleties of touching encounters is limited by language – an observation that many critics hold responsible for much of the deficiency of tactual literature.42 I take solace, however, in the knowledge that writing is, by its very nature, an act of tactility: “text” comes from the Latin textus (‘woven’), past-participle of texere (‘to weave’). Similarly both “write” and “draw” have tactile etymologies meaning to score, scratch, and scrape.43

Another limitation was the requirement to keep this text relatively succinct. Although it has been necessary for me to often draw upon research from other disciplines, I have remained vigilant in my intention that this piece should remain quintessentially architectural. This limitation has been essential in maintaining an architectural focus on the matter at hand, and my treatment and selection of sources has been made with these considerations in mind.

In addition, it is important to note that this critique of the scenographic should not be understood as promoting a non-visual architecture or some kind of anti-aesthetic.44 This thesis appreciates the contribution that vision makes to haptic perception (the tactual qualities something appears to have), as well as the way in which we may be moved and affected by what we see.45 To this end, I have advanced Hayden Lorminer’s notion of “sensuous dispositions”46 (Lorimer, 2005) to develop a “more-than-visual” approach to the issue of architectural perception,47 one that “seek[s] to complement our normative visual experience by readdressing the tactile range of human perceptions” (Frampton, 1985, p. 29).

Overview

Each of the chapters in this thesis is directed towards the central research question: (how) can a more-than visual architecture generate more touching experiences. But not one of the chapters is able to answer this

41 See Overview below
42 (Classen, 2005; Paterson, 2007b; Sonneveld & Schifferstein, 2008)
43 This idea is nicely articulated in the words of Jean-Luc Nancy at the beginning of this thesis. See also Classen (1993); Harvey (2003); Ingold (2007)
44 On the contrary, this thesis is fully in support of a more aesthetic architecture. See Chapter Three
45 See Chapter Three.
46 Lorimer (2005)
47 See Paterson (2011)
in isolation. Indeed, when one attempts to address it directly, it soon becomes apparent that a number of sub-questions must first be resolved: how is architecture currently perceived and experienced and how do these perceptions affect us? What does it mean to touch/to be touched? What is a more-than visual approach to architecture and (why) is it needed? These questions, and many similar, form the starting point for the chapters that follow. Each builds upon the knowledge of the last and in so doing, contributes to a more comprehensive and robust response.

Chapter One begins by recapitulating the current state of architecture within a visually biased culture. By attending to the three primary symptoms – the rise of the icon, the star-architect, and the forgetting of touch – I illustrate the consequences that stem from the common misconception that the perceptual experience of architecture is one that can be reduced to sight alone (Frampton, 1985; Frascari, 2011). I proceed to ask whether there is not a more inclusive alternative. Taking inspiration from the commercial practice of staging atmospheres and brand-scapes, I suggest a more-than visual approach.

Chapter Two is the first of three chapters aimed at developing a felt-phenomenology. I begin by looking at why it is that touch has been forgotten (Paterson, 2005), so that these issues may be identified and remedied. Following a disambiguation of touch (the organ of touch, what it means to touch, what touches, etc.), I establish a phenomenology of touch in order to discuss its significance in affording our sense of reality, of self, and of situatedness (Being-in-the-world).

Given the undeniable importance of appearances in architecture, Chapter Three considers the affective potential of vision, and how we may be touched or moved by what we see. After introducing the notion of haptic-visibility, I suggest that a more synaesthetic understanding of perception could help us to create more touching images of architecture.

The Fourth Chapter expands upon the idea of synaesthetic perception, by discussing the notion of Einfühlung and empathetic perception currently of interest in architectural theory.48 With reference to the way in which we perceive traces, I maintain that Einfühlung, is but one factor that may temper the impression or feeling we have of a place. In other words, its atmosphere. I conclude that it is the atmosphere of architecture that we feel, that touches us, and attunes us accordingly.

Chapter Five is therefore concerned with how architecture can generate particular atmospheres? In this section I employ my felt-phenomenology to analyse a selection of projects from three architectural practices whose approach is often described as phenomenological, and whose works are frequently lauded as atmospheric: Herzog & de Meuron Architekten, Atelier Peter Zumthor, and Steven Holl Architects. I explore the ways in which they conceive and create their designs (with particular attention to their writings and images), as well as the atmospheres generated by the structures themselves during my visits.

48 See in particular, Morgenthaler (2015); Pallasmaa, et al. (2015); Spuybroek (2016); Wagner (2014 [2009])
Finally, the Epilogue recapitulates the preceding research findings. But before my thesis of a felt-phenomenology can be fully accepted, it is necessary to return to where this research began, and address Frampton’s concern for architectural scenography. In other words, to consider whether, in championing the generation of atmosphere as the role of the architect, a felt-phenomenology amounts to anything more than stage-setting?

We cannot as yet see our way forward on account of the obscurity of this concept. Nevertheless we have found the place where such elucidation must begin and have identified the knot which we must first strive to undo.

(Heidegger, 1995 [1983], p. 199)
Chapter One: Towards a more-than visual architecture

Figure 1 – Retinal Architecture: CCTV building (OMA) and Beijing CBD under construction (2015)
Source: Wikimedia
(https://commons.wikimedia.org/wiki/File:Beijing_CBD_2015_September_(day).jpg)
To find their way in the built environment, many think that they rely essentially on vision [...] Architectural interiors and exteriors are photographed from good points of view during tourist visits, picture postcards are bought as mementos, magazines and books on the history and criticism of architecture are filled with illustrations in black and white or in colour. Undoubtedly, our sense of sight gives us much information about the inside and the outside of buildings [...] Nevertheless, non-trivial architecture does not have only visual concerns and what pure vision presents to us is not necessarily architecture's fundamental nature. A cosmopoiesis involves more than the mere vision of objects.

There has been much written on the “ocularcentrism” (Jay, 1993) of Western society and the “hegemony of vision” (Levin, 1993) and it has been subsequently suggested that this retinal-bias is reflected in the “retinal architecture” of our built environment (Pallasmaa, 2012 [2010]-a), such that “architecture today has become the site of spectacle” (Hartoonian, 2012, p. 3). This chapter begins by returning to the architecture of The Great Exhibition of 1851 (The Crystal Palace), and “the very beginnings of ‘the spectacle’” (Murphy, 2012, p. 23).

By adopting the Benjaminian technique of “synchronicity”49 I show how the same influences of economy, technology, and media that engendered the Crystal Palace are also responsible for the sudden torrent of phantasmagorical spectacles and starchitectural ‘icons’ constructed during the New Global Era (1992-2008).

It is not my intention to reaffirm our current condition, however, but to reiterate and reinforce the reciprocal nature of our relationship with our surroundings. The purpose of this is threefold: to illustrate that a retinally-biased culture creates conditions in which a retinally-biased architecture will flourish; to argue from a phenomenological perspective that being immersed within the resultant “placeless” milieus (Relph, 1976) which emerge from such a sensorial imbalance has psychological and emotional ramifications;50 and crucially, to explicate that this is not a fixed condition.

This chapter concludes therefore, by calling for a “re-examin[ing] the experience of built spaces from an always-embodied, more-than visual perspective” (Paterson, 2011, p. 264)

49 For further explanation, see Introduction and Jennings (2008, p. 5)
50 Not least of which is to exacerbate the current condition by furthering the desire and expectation for starchitectural icons and photogenic buildings
Spectacular beginnings

The whole life of those societies in which modern conditions of production prevail presents itself as an immense accumulation of spectacles. All that once was directly lived has become mere representation (Debord, 2006 [1967], p. 12)

In his 1996 publication, The Eyes of the Skin, Pallasmaa, claimed that “architecture of our time often appears as mere retinal art of the eye” (Pallasmaa, 2008 [1996], p. 30). This book, now in its third edition (2012), is a critique of contemporary attitudes towards architecture that results from the dominance of the sense of vision in modern society – along with the concomitant suppression of the body and, in particular, a denigration of the sense of touch (or what Pallasmaa terms, the “haptic” sense).51 For Pallasmaa, “the hegemony of vision” exhibits itself most explicitly in the design of our built environments, where our rich multisensory experience of architecture has come to be understood as variations of a single sense:

The hegemonic eye seeks domination over all fields of cultural production [...] The narcissistic eye views architecture solely as a means of self-expression [...] the nihilistic eye deliberately advances sensory and mental detachment and alienation [...] A sadistic as well as masochistic eye also exists, and their instruments in the fields of contemporary arts and architecture can also be identified. (Pallasmaa, 2008 [1996], p. 22)

This particular sensorial imbalance is reified within our built environment in the form of the architectural spectacle – a common phenomenon that infected many cities throughout the world during the New Global Era (1992-2008).52 So pervasive is this condition, that today we find “an important struggle is waged between [architectural] practices like these concerned with embodiment and emplacement and a spectacle culture that aims to dissolve all such awareness.” (Foster, 2011, p. xi). But what is the real prognosis of this ocularcentric condition? What effect is it having on the society of such spectacles? And is there anything that can be done to remedy the situation? Perhaps the first question that we should be asking is what is it that makes architecture so spectacular.

Fifty years ago, the Marxist writer, Guy Debord, maintained that “[t]he spectacle is capital accumulated to the point where it becomes images,” whose “function in society is the concrete manufacture of alienation.” (Debord, 2006 [1967], pp. 24, 23). Unlike Aristotle, for whom the notion of spectacle was bound with the

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51 I find Pallasmaa’s use of the word haptic problematic, especially in his early writings where at times it seems synonymous with touch and tactility. The author avoids a more concrete definition, except by implication in its frequent contrasting with the sense of sight and visuality. These ideas will be given due attention as the thesis progresses. For the sake of clarity, I shall reserve the use of the term haptic until a felt-phenomenology can be more thoroughly addressed in Chapter Two.

52 (Adam, 2012)
Debord claims that the spectacle could now be conceived separately from experience, and that “[a]ll that once was directly lived has become mere representation” (Debord, 2006 [1967], p. 12). For Debord, this experiential fracturing “entails a generalised shift from having to appearing” to the extent that “‘having’ must now derive both its immediate prestige and its ultimate raison d’être from appearances” (Debord, 2006 [1967], p. 16). This is the difference between the embodied experience of reality (as being-there), and that of an image of reality. In Benjaminian terms, this experiential distinction is mirrored by the senses, in the way that “having [is] allied with the tactile, and stand[s] in certain opposition to the optical” (W. Benjamin, 2002, p. 207 [H2,5]). It is significant then, that Debord also expresses this same abstraction in sensory terms (of vision and touch):

 [...] it is inevitable that it [the spectacle] should elevate the human sense of sight to the special place once occupied by touch; the most abstract of the senses and the most easily deceived, sight is naturally the most rapidly adaptable to present-day society’s generalized abstraction. (Debord, 2006 [1967], p. 18)

In response to Debord’s follow-up publication, Comments on the Society of Spectacle (2002 [1988]), Giorgio Agamben offered a marginal note to Debord, suggesting that the Crystal Palace announced the “prophecy of the spectacle”, since it was here that “the commodity unveiled and exhibited its mystery for the first time” (Agamben, 2000, p. 75).

As a device for amassing and displaying “the industry of man” from “the whole commercial world” (Anon, 1851a, p. 9), the Great Exhibition of 1851 would seem to meet Debord’s definition, and it certainly boasted some spectacular credentials. Built to a length of 1,851 feet – the year of its inauguration (Giedion, 1967 [1941]) – the exhibition’s entire “raison d’être is spectacle” (McKean, 1994, p. 28): housing 100,000 exhibits from across the world (thirty-two nations) displayed across ten miles (14,000 booths) of exhibition space.

The building also needed to accommodate the largest crowd of people ever to congregate in a single place and for a single purpose: gazing – visually consuming the spectacle of the exhibits, the building, and the

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53 Aristotle (2012)
54 A similar sentiment is voiced by Charles Moore and Kent Bloomer: “Possession (of a house, like a body) is a feeling that calls on all the senses but is the direct consequence of feelings that are confirmed haptically, in contrast to the more distant and figurative feelings that are experienced visually and audibly.” (Bloomer & Moore, 1977, p. 47)
55 This is, of course, not to say that there have not been architectural spectacles prior to the mid-nineteenth century, as Mark Wigley reminds us: “To take the most obvious examples, the medieval cathedral was a dominating, spectacular, three-dimensional image system, and the revered Parthenon called attention to itself on the Acropolis above the city by posing in its coat of brightly coloured paint packaging a 40-foot-tall gold and ivory statue of Athena. These buildings were precisely designed to support multimedia spectacles through a collaborating array of banners, clothing, texts, rituals, music, speeches, dance, insignia, furniture, processions, animals, food, poetry, and smells.” (Wigley, 2008, p. 155). This was precisely the theatricality of festival that Aristotle described. More specifically, this was one of three types of spectacle Debord defined which can be differentiated from the others in its synchronicity with reality (Debord, 2002 [1988]).
crowds. Complete with its fantastical visual moniker, it was the largest and most publicised building ever built (McKean, 1994).

Pioneering claims – the first of its kind/ the largest/ the greatest amount of a particular material – typify the attitude of spectacle architecture. The experience of these structures is therefore always novel (until it is bettered by a rival). In the case of the Crystal Palace, this phantasmagoric structure was so unprecedented that it “had the impact of a fairy-story on those who saw it [...] arousing] feelings that seemed to belong only to the world of dreams” (Giedion, 1967 [1941], p. 249). In fact...

The very name of the Crystal Palace had led people to conjure up in their minds a phantasm that could not be realised – a transparent edifice, pellucid as if built of blocks of ice instead of stone – a prismatic kind of fairy mansion, glittering in the sun, and breaking up and scattering light all around in a thousand rainbow tints. (Mayhew & Cruikshank, 1851, p. 134)

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56 “The high-paying portion of the public go to look at each other, and to be looked at, while the shilling visitors go to gain instruction from what they see.” (Anon, 1851b)

57 The Crystal Palace, courtesy of playwright Douglas Jerrold (1850)

58 Yet as John Ruskin is quick to quip, “mechanical ingenuity is not the essence either of painting or architecture: and largeness of dimension does not necessarily involve nobleness of design.” (Ruskin, 1854, p. 6)
A young Charles Dickens describes the visually exhausting experience of the exhibition in a short diary entry, explaining how he felt “used up” by it: “I don’t say that there is nothing in it: there is too much [...] so many things bewilder one. I have a natural horror of sights, and the fusion of so many sights in one, has not decreased it.”59 This capacity to stupefy was a product of the architecture, the content, and the sensory onslaught of new sights, sounds, smells, and textures (of people, animals, machines and materials) from every corner of the world.60

In an attempt to make this “visual feast” more digestible (Mayhew & Cruikshank, 1851, p. 134), the exhibitions were divided by nation and industry, in the taxonomic style typical of the natural scientist of the day (one of categorisation and classification). Exhibitors were thereby encouraged to arrange their wares “to attract the attention of the spectator” (Merrifield, 1851, p. 1). This new experience of displaying goods for inspection, rather than purchase, encouraged a completely new mode of consumption: a hedonic experience of “deriving pleasure from the spectacle alone” (Buck-Morss, 1989, p. 85). This was the effective capacity of the new architecture of spectacle:

Glorify[ing] the exchange value of the commodity. They create a framework in which use-value becomes secondary. They are a school in which the masses, forcibly excluded from consumption, are imbued with the exchange value of commodities to the point of identifying with it: “Do not touch the items on display.” World exhibitions thus provide access to a phantasmagoria which a person enters in order to be distracted. (W. Benjamin, 2002, p. 18)61

Benjamin here identifies a number of issues related to the nature of spectacles: the prioritising of the image or appearance of objects (over and above their functional properties); the edifying potential of such structures to dictate perceptual practices;62 and the notion of creating phantasmagoric experiences for the purpose of entertainment and distraction.63 But this architecture, spectacular as it may be, is only symptomatic of the society of spectacle that engendered it. As Benjamin observes, it is no coincident that this new mode of perception coincided with new type of architecture and new material technologies (iron and sheet-glass) (W. Benjamin, 2002).

59 Cited in Cole and Cole (1884, p. 197)
60 For a discussion of the atmospheric experience of the Crystal Palace, see Chapter Four
61 For Benjamin, this is also the role of the collector, who “bestows on them [collection] only connoisseur value, rather than use value. The collector dreams his way not only into a distant or bygone world but also into a better one [...] in which things are freed from the drudgery of being useful.” (W. Benjamin, 2002 [1935]-b, p. 39)
62 By “educating the eye” (Merrifield, 1851)
63 From social injustice and the prospect of rioting (P. Sloterdijk, 2008)
Although silica glass had been used in England since the seventeenth century, by the nineteenth century it was still very much a modern material – its origins mysterious and protected by the guilds. But as a material with no direct architectural genealogy, glass (and iron or *ferrovitreous*) structures were without an inherent style, archetype, or established technique (Giedion, 1967 [1941]). This in turn created “the crisis of present-day [1819] architecture” (Hübsch, 1838, p. 2) which was precisely a crisis of style (Hübsch, 1992): not knowing how to use it in a manner that was acceptable to Victorian society (morally, aesthetically, technically) (Murphy, 2012).

Moreover, our sensory sensibility – an associated feeling for and of the material itself – had not time to develop. Whereas wood, stone, and brick have been engrained in our sensory subconscious over centuries of making, Benjamin suggests that glass and iron came “too early” to find their own means of architectural expression and connotations.

These new materials initially adopted the architectonics of wood and stone, imitating traditional forms and modes of construction. Thus, the arcades and department stores – the first applications of modern materials – resembled Christian churches and Oriental Bazaars (Buck-Morss, 1989).

The employment of glass therefore came to be associated with its architectural application: as a visual bridge and a tactual barrier between the body of the object (spectacle) and that of the denizen (spectator) constructed for the purpose of “arousing desires” (W. Benjamin, 2002, p. 828). Consequently, glass came to be recognised as “a cold sober material,” without “aura” (W. Benjamin, 1999 [1933]-b, pp. 733-734).

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64 In Pliny’s *Natural History*, (Pliny, 1847 [AD 77]. book xxxvi, c.45), the author describes how the Romans had already been using a semi-transparent fossil called *lapis specularis* (literally ‘mirror stone’) to create “glazed frames,” in order to protect cucumbers during the winter months (as they were a “wonderful favourite” of Emperor Tiberius) (Pliny, 1847 [AD 77]. book xix, c.23)

65 Iron too had a relatively short production history, first employed *en masse* for the railroads

66 The first four issues of the *Journal of Design and Manufacture*, for instance, deliberately sought to educate and develop the particular taste of its readers, through assertions such as “ornament is not principal, it must be secondary to the thing decorated”; there must be “fitness in the ornament of the thing ornamented”; wallpaper must give “the proper impression of flatness”; glass must show the clearness of water; shams in woven and printed fabrics are objectionable; ironwork must be treated in harmony with “the material and its manufacture”; “the stucco abomination” must not hide “honest brick” (cited in McKean, 1994, p. 9). These particular notions of material appropriateness are discussed further in the Epilogue.

67 Connecting, stacking, moulding and weaving (Semper, 2010 [1851]). See Epilogue

68 On this, see Leslie (2000, pp. 76-79)
Figure 3 – Cover of the Illustrated London News, January 11, 1851: “view showing the rise of the transept”
Source: Illustrated London News
Figure 4 - Documenting the Construction of the Great Exhibition
Source: The Illustrated London News, December 7th, 1850
The Crystal Palace therefore represented “a new conception of building” (Giedion, 1967 [1941], p. 251). It was created from nearly one million sheets of glass (weighing 400 tons), each of the largest proportions that could be constructed by hand (four-feet wide). Never before had glass been used to build like this – in this quantity and in such large spans.69

Another important factor to consider in the inception of the spectacle and the subsequent sensory segregation is the influence of the media.70 Ever since the advent of movable type, technological production of written information has endeavoured to extend and supplement our senses, manipulating the relationship between them – or sense ratio – and distorting our sensorium in the process (McLuhan, 1962).71

This can be seen, for instance, in the invention of the steam-powered printing press at the beginning of the nineteenth century. With this came the ability to cheaply reproduce images and text to more people than ever before. This encouraged the propagation of cultural values and morals throughout Victorian society, conditioning both social and material sensibilities by dictating how one should interact with particular objects and people (Liddle, 2009).72

Perhaps the greatest impact of this proliferation of printed information was the reproducibility of not just textual information but graphical too. Papers like The Graphic (1869-1932), The Illustrated London News (1842-2003), and Punch; or the London Charivari (1841-1967), reproduced wood-engravings from illustrators (the ILN in particular would often include as many as thirty-two illustrations in every sixteen page publication).73 The effect was indeed remarkable, as one reader affirms: “Our great authors are now artists. They speak to the eye, and their language is fascinating and impressive.” (Anon, 1851c, p. 451). So taken is the author with this new way of seeing, he goes on to suggest that in its inexpensive mobility, a

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69 This feat was only possible due to recent developments in manufacturing techniques and significantly reduced construction costs (the glass tax was abolished in 1845, dropping the price of glass by half over the following two decades).
70 As discussed at length by Ong (2002 [1982]) and McLuhan (1962). For an overview, see (Mackay & O’Sullivan, 2003 [1999])
71 Tellingly, Marshall McLuhan notes that architects in particular have a responsibility to appreciate how technology like the printing press has informed the architecture of the past, as well as understanding how “new media forms [...]inspire] the fashions of the present” (McLuhan, 2005, p. 51).
72 The majority of these publications were covertly instructional, whose edifying text exploited pedagogical imagery in a similar manner to scientific textbooks, with a view to educating the reader. Publications such as The Spectator (1828-), The London Gazette (1665-), and The Quarterly Review (1809-1967) tended to focus of the transmission of information through very astute observational accounts, often in quite immoderate detail (Teukolsky, 2009)
73 Although photography was practised and available by the last quarter of the nineteenth century, reproduction technologies limited its direct transmission in publications and journals. This ‘limitation’ ensured the intervention of the hand in all image production and reproduction at the time: either the illustrations were created by the artist at the event itself, or else engraved copies of photographs – consisting of a series of lines and dots - were produced manually. This process naturally led to inaccuracies as well as a loss of detail and a degree of exaggeration. It was not until the invention of half-tone printing, that the services of the artists’ hands were no longer required (see Piotrowski, 2011, p. 165).
printed reproduction of the sights on display at the exhibition is far superior to the embodied experience of physically visiting it. Indeed, “the Exhibition would be a comparatively feeble instrument for helping forward improvement, without the assistance of illustration and letterpress to convey a knowledge of its wonderful palace and its contents to the many millions that cannot possibly visit it.” (Anon, 1851c, p. 452).74

Even once the visitor had arrived at the exhibition, various guidebooks and exhibition catalogues were available for purchase, with illustrations and information to educate the reader, explaining what to look for and how to see it: these were “handbook[s] for those who have not time for more than a rapid examination” (Anon, 1864, p. 3). Thus, “education of eye and mind was going on at a thousand points at the same moment directly and indirectly – formally and informally – by example, suggestion, and illustration.” (J. Tallis, 1852, pp. 101-102).

74 The success of the visual consumption of information soon included the visual consumption of objects through advertisements published in these journals. These sites of advertising extended beyond the printed page and into the built environment and city-life at large, from the transitory ‘sandwich boards’ carried around by individual unskilled workers, to stationary posters enveloping entire sides of buildings, and even railway stations: each became “sites of commercial beautification” (Piotrowski, 2011, p. 200).
But perhaps the most telling account of contemporary attitudes towards visual and embodied perception can be found in an issue of *Punch*. The article reports of a disgruntled member of the public, who is exhausted and overwhelmed at the very idea of having physically to walk around all of the exhibits.75 Instead, the author proposes a less physically engaging experience (not dissimilar to that afforded by the modern television)76 “for the convenience of persons who are not fond of walking, or who have not the spare time”:

all the objects exhibited on those counters should be represented in twenty miles of canvas, or, perhaps, ten [...] The visitors are to sit down in comfortable chairs, whilst the collection of wonders is being slowly unrolled before them [...] the room, in which the Panorama is to be exhibited, should be fitted in glass, as much like the Crystal Palace itself as possible, so as to assist the imagination [...] a Professor of all the Arts and Sciences should deliver a rapid lecture [...] the price of the panorama should not exceed One Shilling.

(Anon, 1851d)

Predating the first movie theatres by half a century, the concerns of this author are clear: prioritising the visual experience to the neglect of the embodied and multi-sensory experience of *Being-there* – the smells, sounds, and the feel of the atmosphere (Böhme, 2017).77 While it is not known how representative this view was of Victorian society in general, that the Crystal Palace had an effect upon the sensibilities of the time is beyond doubt.78 And it is certainly suggestive of the external influences of the first society of spectacle (T. Richards, 1990).

In its most recent iteration during the New Global Era (1992-2008), the nature of the spectacle has evolved to reflect the current climate. More pervasive and more prevalent, the spectacle is now a standard and accepted element of many facets of consumer culture, blurring the lines between advertising (fantasy) and architecture (reality).79 The term, *spectacle*, has now come to stand for a myriad of architectural elements and theories, and is used broadly within the architectural discourse to address issues such as commodification, alienation, hypermedia, hegemony, and heterotopia (Lu, 2008). A more comprehensive definition is offered by Saunders:

75 “How ladies will manage, he is fairly at a loss to imagine. Why, the walk from one end of the Exhibition to the other will be quite enough to knock them up!” (Anon, 1851d, p. 79)
76 See also Frampton (2004, p. 220) and Introduction
77 See Chapter Four
78 As Jürgen Habermas opines, the new architecture of the Great Exhibition “revolutionized visual experience and altered the spectators’ concept of space, as dramatically as the railway changes the passengers’ concept of time.” (Habermas, 1989).
79 A common practice employed in the art of staging (Böhme, 2017)
Spectacle is the primary manifestation of the commodification or commercialisation of design: design that is intended to seduce consumers will likely be more or less spectacular, more or less a matter of flashy, stimulating, quickly experienced gratification, more or less essentially like a television ad. The stimulation that leads to ‘Wow!’ or to immediate sensual pleasure is more prominent than any implicit invitation to slow savouring and reflection.\(^8\) (Saunders, 2005, viii)

Clearly this is not the same spectacle that Debord had in mind fifty years earlier. In fact, contrary to the Debordian definition, it has been argued that the contemporary architectural spectacle is “an image accumulated to the point where it becomes capital” (Foster, 2003, p. 41). The relationship between the construction of architecture (in ‘reality’ and ‘appearance’) and the materialisation of the spectacle as a *brand*, therefore demands a revision of the way in which we theorise contemporary perceptions of architecture (Krupar & Al, 2012).

What have remained consistent, however, are the forces that enable the spectacle to thrive: economy,\(^8\) technology and media. Each of which has come a long way since the Victorian era. We now have a wealth of new materials, manufacturing and construction technologies, as well as digital modelling tools and computer software tailored to perform even the most complex engineering calculations. Between the non-Euclidean forms imaginable in the virtual space of modern CAD programs, and the technology literally to *print* architecture,\(^8\) materials today have seemingly limitless aspirations, and the idea of taking Kahn’s advice and asking the building element what it wants to be now seems nonsensical. Continuing the pursuit of tectonic independence,\(^8\) we can now design almost anything imaginable, and construct almost anything we design: what do you design when the design can be anything? Once again we have arrived at a point where there seem to be too few constraints. Thus, a century after Hübsch, the crisis of our present day architecture is less a crisis of style than one of language (Harries, 1997).

Questions of form, symbolism, and ornament that this tectonic freedom raised were famously discussed by Robert Venturi, Denise Scott-Brown and Steven Izenour, in *Learning from Las Vegas* (1972). The authors differentiated between “ducks” and “decorated sheds,” where the latter resulted from ornamentation applied to the surface of buildings (shaped by their function); while the former belonged instead to those

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\(^8\) See also Frascari (2011)
\(^8\) Late capitalism that encourages consumerism aimed at a visually-biased culture, through images and advertisements
\(^8\) In 2014 the Chinese company, WinSun Decoration Design Engineering Co, succeeded in constructing ten single story, 3D-printed houses in twenty-four hours. In 2015 the same company completed a pair of five story apartment blocks. There is now even speculation about printing entire urban blocks (http://www.dezeen.com/2013/05/21/3d-printing-architecture-print-shift/)
\(^8\) For a discussion on the role the surface of architecture since its tectonic liberation, see Leatherbarrow and Mostafavi (2002)
that resulted from the construction of symbolic sculptural forms. But recent developments have seen the birth of a new hybrid form: the “decorated duck” (Foster, 2004, p. 310). This particular breed of fowl architecture combines “the wilful monumentality of modern architecture with the faux-populist iconicity of postmodern design.” (Foster, 2004, p. 310). Gevork Hartoonian summarises the situation succinctly, stating that “the technification of architecture (to use Adorno’s term) empties the tectonic of any import for architecture” (Hartoonian, 2012, p. 185), so that we now have a “crisis of architectural tectonics” (Picon, 2012, p. 502), or what Hartoonian calls, “the crisis of the object” (Hartoonian, 2006a).

The archetype for this hybrid was Frank Gehry’s design for the Guggenheim museum building in Bilbao. The museum was to form part of a larger regeneration strategy for the Spanish industrial port that had been in a steady state of decline. The master-plan for the area (designed by the Argentine-American architect Cesar Pelli), involved commissions from a number of famous architects, including a footbridge by Santiago Calatrava, subway stations by Norman Foster, and a transport hub by Stirling and Wilford Architects.

As with the Crystal Palace, this new type of design was made possible thanks to new technology. By adapting CATIA – a three-dimensional modelling software that had hitherto been employed for aerospace, automobile, and medical industries – Gehry was able to digitally map his sketch models, so that the structural components could be assessed and assigned by the computer. This meant that, within certain parameters, the design focus could be primarily on the aesthetic appearance, its form, and the overall spatial composition (Foster, 2008). Without such technology, this “formless” architecture would have remained just that – an exasperating challenge to the traditional orthographic imaging techniques (Vidler, 2002).

And as with the Crystal Palace, this novel spectacle of Bilbao was a financial triumph. Built in 1997 at a cost of $100 million, the project has attracted over fifteen million visitors (between its opening and 2012). In its first year the museum generated an estimated €150 million GDP and €27 million in tax revenue for the city. In the first three years these figures rose to over €450 million in economic activity, and €100 million in new taxes. This was a quantifiable measure of success, leading some architecture critics to claim that the building represented a miraculous achievement for architecture (Muschamp, 1997).

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84 See Epilogue  
85 (Adam, 2012; Foster, 2004; Hartoonian, 2006a; Jencks, 2006)  
86 Computer Aided Three Dimensional Interactive Application  
87 Not an architecture without form, but one that employs a unifying outer skin that “intends to be original, non-referential (to place or program), spectacular in its chromatic and luminous effects, and insistently coherent” (Leatherbarrow & Mostafavi, 2002, p. 198)  
88 The Great Exhibition of 1851 attracted over six million visits within the first six months, and generated a total of half a million pounds – nearly three times total construction costs (Timbs, 1851)
The obvious consequence of this was that it gave weight to the idea that big, bold, and new architecture could rapidly transform the image (and wealth) of a city. This became known as the “Bilbao Effect” (Rybczynski, 2002), which can be best expressed by Rybczynski’s formula (2003): “Eye-popping architecture + cultural attractions = more tourists” (and more money). 89

The success of this myth is due (in part) to the role played by visual technologies of mass media and image (re)production. Big, showy and eye-catching spectacles are capable of producing images that attract attention and sell magazines, and thence sustain the myth of the spectacular icon. 90 The effects are as evident in the built environment as they are in the classroom. Ask any architectural student to research a particular architect or building and before you can suggest a physical reference, mobile devices are called into service and internet search engines do the rest: a Google search for “Frank Gehry” returns 1,790,000 results in 0.3 seconds.91 The situation can be summarised thus: “More architectural ideas are currently disseminated through the visual media and text, photographic images, internet websites, and videos, than through any actual buildings or structures” (Tierney, 2007).

It is no great leap to connect a rise in ocularcentric architecture (and the spectacle) to a rise in the visual access to architecture (and the misconception that this visual access negates the need for any further physical exploration). This has, understandably, become a source of contention within the architectural and educational community. As Frascari laments:

Presently architecture is laying bare, melted in a senseless commercial presence by, on the one hand, a visual exploitation of photo-renderings and, on the other hand, by the transformation and unifying colonisation of the modes of production caused by building information modelling (BIM). (2011, p. 60)

Critics of these visual technologies (3D modelling and CAD software in general) are often actually condemning two interdependent aspects: the first concerns the production of architectural images (and the resultant buildings); the second concerns the reproduction of these images, or rather, the way in which they are proliferated and assimilated across the globe. Broadly speaking, such arguments are presented as follows:

89 Although perhaps this should be the Crystal Palace Effect (see previous note)
90 And the effect of the internet should not be underestimated: although the internet has been around since the late 1980s there have been a number of dramatic changes. The number of websites (www) increased from 1 million in 1991 to 29 million within a decade, and as of today (1/28/17) there are 1,141,419,128 websites currently online (and counting). There has also been a similar growth in the number of users. In 1995 it was less than 1% of the world’s population, 15.8% in 2005, and today it’s up to 46%. More information available to more of the people more of the time. (http://www.internetlivestats.com/)
91 Other celebrity architects deliver similar results: “Zaha Hadid”: 901,000 (0.18s); “Tadao Ando”: 725,000 (0.36s); “Daniel Libeskind”: 696,000 (0.34s); “Rem Koolhaas”: 806,000 (0.34s)
[...] the use of computers for hyper-real renderings has generated a certain return to perspective in architecture. As the publication of colour images of a realised building are of uppermost priority to architectural practices, the hyper-real rendering becomes a substitute for the photograph until the building’s completion. It encourages the creation of photographic buildings. (Kaminer, 2011, p. 173)

The process then becomes cyclical: architects (as well as clients and students) find inspiration from images (in magazine, websites and television), the visual impression of which may become transplanted into the design for another (unrelated) building in another (unrelated) climate (cultural, political and meteorological). With a particular image in mind (that is, a sense of what looks good, what’s fashionable, what’s in vogue), forms are manipulated and contorted until the right look has been achieved. Such projects practise form-making over form-finding, the latter being influenced by numerous variables specific to its site, context, materials and method of construction, the former by contrast is influenced by fashion and the stylistic whims of the architect. As Murphy explains:

the architect genius comes up with a form that looks spectacular when mocked up as a computer-rendered image viewed from an impossible location at an impossible angle; something that only a satellite can enjoy – a phenomenon known as ‘Google Earth urbanism’. This shape might be an abstract ‘back of the napkin’ effort by the genius architect, or it might be an utterly banal bit of capitalist symbolism; flower petals, a string of pearls, rolling hills [...] it will inevitably be ‘fluid’, or ‘dynamic’; even if it will never actually move. Any shape is possible; the technology now exists to make it happen. (Murphy, 2012, p. 136)

A rendered image is then set-up (staged) at a particular angle and with a particular lens distortion, which is then tweaked and aestheticised further in the same image-editing software used by fashion photographers. The result is another stunning image, designed to confront the viewer, arrest their attention, and (visually) entertain by providing a novel or unique distraction (A. Benjamin, 2005a; Taussig, 1991).

These interrelated conditions created a fertile soil that not only enabled the spectacle to grow, but to flourish – a condition that manifest as a societal infatuation with iconic architecture and the celebrity or

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92 See for instance, the late-nineties fad of so-called Blobitecture (Waters, 2003)
93 What Frei Otto referred to as “Gestaltung” (form-making) and “Gestaltfinden” (form-finding).
94 See Böhme (2013a)
95 Economy, technology and media, within a visually biased society
star-architect (colloquially, “starchitect”)\textsuperscript{96} (Adam, 2012). The consequences of which are only now recently being felt.

\textsuperscript{96} Not a term that has been unequivocally accepted by practitioners: “I hate the word starchitect [...] It’s demeaning. It’s derisive, and once it’s said, it sticks. I get introduced all the time, ‘Here’s starchitect Frank Gehry...’ My reaction: ‘What the fuck are you talking about?’” (Gehry & Sheff, 2011).
Instant icons

“Throughout history,” writes William Curtis, “monumental architecture has been employed to embody the values of dominant ideologies and groups, and as an instrument of state propaganda.” (Curtis, 1996, p. 351). It is true that we have always desired monumental architecture and commemorative spectacles,97 but today, “architectural iconicity has begun to replace monumentality” (Sklair & Gherardi, 2012).

Traditionally, iconic architecture was employed as an expression of power or devotion to a particular religion or state – a communicative device to the inhabitants of the city in which it stood.98 Faith in both of these, however, has long since dissolved. What remains is a strong desire for monument, but a lack of conviction as to what the monument should stand for (Jencks, 2005). This has led to ambiguous forms and multivalent gestures, a situation that “will inevitably produce enigmatic signifiers of varying quality” (Jencks, 2005, p. 196).99 Examples of such signifiers include Norman Foster’s Swiss Re building – colloquially ‘the gherkin’ – which may also be interpreted as a number of images or forms including “missile, screw, bullet, penis, finger, pine cone, cigar – and also somewhat farfetched – brain and Russian Doll” (Jencks, 2006, p. 13).

The task of creating icons is further complicated by the fact that the word ‘iconic’ has become an umbrella term for the spectacle, and it is not uncommon to find the term applied to a building; an architect; an element(s) of the building; the character of the building; its shape or form; and even its silhouette (Sklair & Gherardi, 2012). A sentiment shared by architecture critic Rowan Moore, who notes that the use of “iconic” seems to now mean…

that the building is conspicuous and strikingly shaped. That it has a lot of curves [...] At this point “iconic” doesn’t mean much more than whooshy, and as these sort of curves are now not so unusual on the world’s many wannabe icons, we are left only with a debate as to whether the [building in question...] has a better class of whooshiness (R. Moore, 2015)

As a result, the word ‘iconic’ has lost much of its sovereignty. Architecture once had to achieve an iconic status by having maintained notoriety and acclaim over a sustained period of time. Thus, an iconic building is one that is culturally sustainable (withstands the test of faddism) and continues to be appreciated for its beauty, craftsmanship, or sociocultural relevance – it becomes emblematic of a place, an architect, or an

97 As Semper explains: “The festival apparatus – the improvised scaffold with all its splendour and frills that specifically marks the occasion for celebrating, enhances, decorates, and adorns the glorification of the feast, and is hung with tapestries, dressed with festoons and garlands, and decorated with fluttering bands and trophies - is the motive for the permanent monument, which is intended to proclaim to future generations the solemn act or event celebrated” (Semper, 2004, p. 249)
98 For an introduction into the communicative potential of architecture, as a semiotic device, see Barthes (1997); and Eco (1997)
99 What Sklair and Gherardi refer to as a “crisis of monument[ality]” (2012)
idea. Today, by contrast, icons are expected from the start, and they are often even written into the original design brief (Long, 2003). This means that the new spectacle must establish its position as more iconic than its predecessors. In marketing terms, this is the thing that sets it apart from its competitors - its unique selling point (USP): the biggest, fastest (constructed), or first of its kind (for now). Quantifiable aspects of an architecture of braggadocio. In this respect, the first two terms of Rybczynski’s formula are merged into a single object/form: the cultural attraction of eye-popping architecture.

The onus is then on the architect to create something that looks iconic, which may simply mean aiming for verisimilitude to an historically (proven) architectural icon through visible resemblance, as though this were somehow an accurate means by which to speculate on the success of a future building.

Furthermore, these images are expected to achieve pre-eminence prior to breaking ground: as photorealistic renders, each image becomes a prophetic promise of the sight that the built product will offer future users/spectators (and the lenses of their cameras) (Kaminer, 2011). Aesthetised images of spectacular looking architecture is thus a self-fulfilling prophecy. As Wigley observes: “Such buildings act as

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100 See Morrison (2004)
efficient broadcast devices, projectors that continuously launch a barrage of image missiles. Projects turn into projectiles, and architectural quality is judged by the number of images that land around the world." (Wigley, 2008, p. 155). Consequently,

The more ubiquitous the exposure an icon receives the better, the architectural icon has to be visible not only from as many points of the city as possible, and in its skyline, but also on TV news, backgrounds to TV programs, newspaper and magazine articles and films. (Sklair & Gherardi, 2012, pp. 64-65).

Moreover, the design doesn’t even need to be liked for the project to be successful (at least as an advertising exercise), and in fact it may even receive more publicity if the reception is negative (Jencks, 2006). So long as the response is loud enough it doesn’t seem to matter what is actually being said, and so by simply making a lot of noise the building succeeds in creating ‘a buzz’ and encouraging a viral representation across social media sites (re-tweets, re-sends, re-posts). And it is not just the iconic status of the architecture that is being propagated, but that of the practice responsible as well.

As with the Crystal Palace, the use of mass-media is of the utmost importance in promoting and generally increasing visibility, and today architects are able to propagate their own brand through on-line publication

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101 See, for instance, the controversial Tour Tower (Paris), designed by Herzog & de Meuron, which has been on hold since 2009 (Frearson, 2015). Or the design for two interconnected skyscrapers for Seoul, Korea, that also happened to resemble a still image from footage of the 9/11 attacks on the twin towers, New York (Frearson, 2011)
of images, articles, interviews and manifestos. In some cases, their reach may also extend beyond their own discipline. This can be seen in the way many celebrity architects also undertake guest-editing of magazines and journals, present TV programmes or appear on talk shows, and generally in their collaboration with large cooperate organisations on the design of everything “from bathroom accessories to branding strategies” (B. Lee, M., Kang, Kwok, & McClure, 2005, p. 4).

Rem Koolhaas, for instance, also heads AMO – an ‘independent’ counterpart to his architectural practice, OMA – which “operates in areas beyond the traditional boundaries of architecture, including media, politics, sociology, renewable energy, technology, fashion, curating, publishing, and graphic design.” The research carried out by AMO, which recently included a design for a new EU flag, may then be used “to fertilize architecture with intelligence from this array of disciplines.”

Unlike the spectacle, which may be spectacular for its own sake, the icon has a specific purpose in mind: instant visual brand recognition. In this respect, the Bilbao Guggenheim is at least as much of an exhibit as its contents (echoic of the Crystal Palace), and its image is today more emblematic than the city it was designed to promote. As Guggenheim director Thomas Krens explained to the Bilbao government in 1990 – the aim was to create “a building that was capable of carrying the identity of a place.” Citing examples of the Sydney Opera House and the Centre Pompidou, Krens already understood the modern challenge of successful (profitable) tourist destinations: “to find the ‘stroke of genius’ that will uniquely associate the icon with the destination” (Goeldner & Ritchie, 2009, p. 247). That ‘stroke of genius’ would be the signature of the starchitect (Krupar & Al, 2012).

Since then, many high-end companies have subscribed to the Guggenheim marketing strategy of acquiring architectural autographs from high-end architects: Tadao Ando (Armani), Gehry (Miyaki), Koolhaas (Prada; Porsche), Hadid (BMW), and Herzog & de Meuron (Prada) (Krupar & Al, 2012). Big companies with big budgets commissioning big architects to create similarly sizable (and solipsistic) spectacles. The expectation is that the resultant structure will perform as a marketing device that will increase publicity and interest in the brand (of both company and architect) (Adam 2012).

This was to be the real Bilbao Effect. It was not that the formula worked as a means for achieving prosperity – a notion that Gehry unequivocally refutes – but the idea of the formula. In other words, it encouraged a

102 Complete with the obligatory ‘hashtag’ (#iconic; # spectacle; #overusedsuperlative)
103 From their website: http://www.oma.eu/oma
104 A state of affairs described by Frampton as the “[...] theatricalization of architecture which in favouring the spectacular as the immediate gratification of fetichistic desire [...] offers nothing beyond the aestheticized mirage, by which the subject, to coin T. S. Eliot’s memorable phrase is to be ‘distracted from distraction by distraction’.” (Frampton, 2006, p. xv).
105 Cited in Jodidio and Gehry (2000, p. 22)
“cargo-cult” attitude towards urban design,\textsuperscript{106} and set a precedent for this speculative if you build it they will come design approach.\textsuperscript{107} In the early years of the twenty-first century Bilbao would seem to be the exception rather than the rule (Adam, 2012). For an illustration of the impotence of the Bilbao Effect, one need look no further than Gehry’s other major commission at that time, the Experience Music Project (EMP).

In the year before the Guggenheim was completed (1996), Microsoft co-founder, Paul Allen, asked Gehry to design a rock-and-roll museum in Seattle. The result, which in hindsight may be seen as quintessential Gehry, was an amalgam of coloured stainless steel and aluminium blobs – a shimmering undulating skin that dominated a major intersection between Broad Street and 5\textsuperscript{th} Avenue. The form was apparently inspired by the shattered fragments of an electronic Fender guitar smashed on the ground (the mimicking the gesture performed by rock bands at the end of concerts).

The EMP is certainly as photogenic as the Guggenheim, offering new perspectives and reflections around every corner that change dramatically with the weather and the time of day. And in each instance, “the tectonics of the skin [...] settles for being a gigantic piece of sculpture, a skin wrapped over a rather primitive armature without any regard for either the tectonics of assembly or for the articulation of ‘micro-space’.” (Frampton & Hartoonian, 2016 [2001], p. 45).

\textsuperscript{106} As Denise Scott-Brown explains: “Let me highlight Bilbao’s reasons for building it through a short story. There are primitive tribes in the Borneo jungle whose members watch planes flying overhead. To them, these are big birds, and the people know they bring untold riches to the cities beyond. They wish the birds would land where they are and bring them wealth. They know, too, that airports bring the birds to earth. So they make themselves an airport. They scratch a landing strip in the ground and construct a spindly control tower of twigs and branches. This architectural supplication is intended to call the birds down. The belief system it serves is called a ‘cargo cult’ [...] And at Bilbao it worked – once, because the architecture was new. Build four more Bilbaos, and it won’t work because it won’t be new. People don’t necessarily want to live with that structure; they want to see it. They want to say, ‘Oh, gee!’” (Scott-Brown, 2009, pp. 72-73)

\textsuperscript{107} One which its own city councilman admitted was a gamble (Zulaika, 2011)
But despite the similarities between the two projects (both museums designed by the same architect to be signature buildings for the city; both brandishing similar non-Euclidean forms and glistening metallic scales), there would be no *Seattle Effect* to compete with its European cousin. Far from it in fact: visitor numbers never reached early projections, curators left, staff were made redundant, and the basement is now let out to a science-fiction exhibition. And as for the loose visual allusion to the shattered guitar, this is not something that one is ever aware of at street level (even less so within the building, which bears little resemblance to the architectonic promises made by its façade) (Foster, 2008).

In fact, the Fender reference is only apparent (after being told) when seen from above, in the so-called *God’s-eye view*, popular in mass-media reproductions. Curiously, the only other position where this image can be seen, is through the glass of the viewing deck at the top of the Seattle Space Needle (160 metres above the ground). At this distance the user is sufficiently abstracted from the lived experience of the building to become simply a spectator, free to contemplate visually the EMP from above as an untouchable object, like a piece of jewellery in a shop window (Barthes, 1981 [1980], p. 41).

108 A structure built as a landmark attraction for the 1962 World’s Fair
109 Characteristic of *pornographic* architecture. See Chapter Three

*Figure 9 – “the triumph of image over substance”: (left) Space Needle admires its reflection in the EMP; (right) “primitive armature” is exposed in the interior (2014)*
*Source: author*
The spatial experience internally fares little better. As the result of photogenic form-making (novel and aesthetically intriguing), the space that this form encloses is unapologetically compromised and the lived experience is ultimately impoverished: the interior space is *all poché*; space that is *left over* from building the form (the image), as if the mask had been created without any thought as to the requirements of the wearer (such as face shape or the need to see out and breathe). The structure is only occasionally visible from the inside (such as in the entranceway or through gaps between interior finishes), but it lacks any of the smooth, reflective surfaces to which the exterior is treated. The lack of apertures perforating the seamless skin, and the consequent loss of natural light, prohibit any clear sense of time or orientation. Furthermore, the billowing outer walls and undulating ceiling fail to aid in the exhibiting of musical paraphernalia or, for that matter, the viewing experience of said exhibits – the majority of which were simply mounted against standard (flat) matt white or black plasterboard walls. Here is a clear example of “the triumph of image over substance” (Vidler, 1994, p. 66) that typifies the top-down approach of instant icon design.

After three years the EMP was shut down\(^\text{110}\) and would become only one of many results to disprove the Bilbao formula.\(^\text{111}\) But despite the failures, the myth of the Bilbao effect persisted, seemingly unscathed by the scores of unfinished spectacles that ground to a halt during the global economic crisis (2007-2009).

The deficiencies of iconicity and starchitecture are perhaps best illustrated by the recent work of the Uruguayan architect, Rafael (Beceiro) Viñoly. Although already designing decorated ducks abroad,\(^\text{112}\) Viñoly’s first major commission would be for a new concert hall in Philadelphia. Having originally commissioned the Venturis, the concert-hall backers dismissed their proposal for a modestly decorated shed, and began to look elsewhere for their icon. The budget was quadrupled (from its original $60 million) and a competition was held, which Viñoly subsequently won.

Viñoly’s entry came in the form of a giant glass tunnel, reminiscent of the twentieth century exhibition halls. The trussed barrel vault structure is composed of 76 millimetre (3 inch) thick glass panels, each measuring 2 metres by 1 metre. These are supported by rectangular steel tubes that permit the structure to reach a height of 46 metres, and span a distance of 53 metres. But all of this remains just the outer-skin, the covering that cloaks the otherwise rather dull geometries of the Perelman Theatre (a multi-purpose theatre) and the Verizon Hall (2,500-seat concert hall). In a style similar to the exhibits in a museum, the building was designed as “jewels in a glass case”, protected from touch but exhibited to sight (B. Richards,

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\(^{110}\) Though it would later reopen after a large fundraising campaign

\(^{111}\) Perhaps most famously, the Millennium Dome project, in Greenwich, England: Construction cost $1.25 billion and after failing to attract enough interest, closed within a year (see Dorrian, 2008; and Sadler, 2014)

\(^{112}\) Such as the Tokyo International Forum in Japan (1996) and the Jongo Tower in Seoul, South Korean (1999)
This jewel-box fulfils the criteria for a highly-visible, highly recognisable sheath that acts as “an urban marker, an iconic image for the city.” (B. Richards, 2006, p. 160).

But, as with the EMP and many others, this icon failed to live up to the hype. In a now familiar tale of decaying starchitecture, ticket sales declined, the company fell well short of early (optimistic) projections, and were unable to keep up with the high operating and maintenance costs ($14.5 million per year), and subsequently fell well behind on the rent (Woronkowicz, Joynes, & Bradburn, 2015). Four years after its initial opening (in an unfinished state in 2001), the Kimmel Centre sued Viñoly for “deficient and defective design work,” that allegedly lead to significant errors and delays, amounting to $32 million in overruns (Kelly, 2006). The lawsuit was unsuccessful, however, and six years later the Philadelphia Orchestra filed for Chapter 11 protection from its creditors due to bankruptcy (2011).

Viñoly is best known today for 20 Fenchurch Street, London. This 160 metre tall skyscraper (presently the fifth tallest building in London), consisting of 34 floors of let-able office space (the majority of which is already occupied by various global insurance companies), and three floors at the top that are open to the public (containing a couple of restaurants, a bar, and a public ‘park’). “This iconic address”, the website explains, offers “unrivalled panoramic views of London.” By focusing the gaze of the visitor outwards, as well as elevating them to new heights, a new perspective of the city is presented. The building is thus able to offer the city as an object of contemplation; a spectacle in its own right. This novel optical experience “is one of the most important forms that the spectacle takes today” (Dorrian, 2008, p. 44).

Aside from creating “a platform from which the City could admire itself” (R. Moore, 2015), the most obvious feature of the building is its form: a gentle curve on two sides of the structure follow the design of floorplans that increase in size as they rise up, maximising areas where floor space is at a premium. This has created an overall form similar to old two-way radio receivers, for which it has since been dubbed the “Walkie-Talkie” building. This ‘signature’ bulbous curve had the unfortunate result of creating a concave shape that, for approximately two hours a day, would project the sun’s rays into an intense beam aimed back down at the street below. The severity of the heat was sufficient to set fire to doormats, crack tiles, and even melt parts of cars and bicycles. Here again, the media were quick to spread news of London’s new ‘fryscraper’, the ‘walkie-scorchie’ (R. Moore, 2015; Wainwright, 2015b).

113 http://www.20fenchurchstreet.co.uk/the-building.html
114 See also the Vdara Hotel, Las Vegas (2009), and Raffles City in Bahrain (2012)
115 The building has since been blamed for creating a dangerous wind-tunnel effect, channelling a powerful downdraught onto pedestrians in the streets below. Later that year it went on to win the much deserved Carbuncle Cup, for the worst building in the UK (Wainwright, 2015a). Notable starchitects to be nominated for the award in previous years include OMA (Serpentine Pavilion, 2006), Foster + Partners (Moor House, 2007), SOM (Broadgate Tower, 2008), César Pelli, (One Park West, 2009), MAKE architects (Amenities Building and International House, 2009;
An unfortunate and unforeseeable side-effect perhaps, but it is not as though it is without precedent. After its completion in 2004, for instance, the stainless steel façade of Gehry’s Disney Concert Hall (Los Angeles), reflected massive amounts of solar glare and heat through the windows of neighbouring properties at various times of the day. It has since had parts (4,000 square feet) of its billowing skin sandblasted to reduce the effect.

But Viñoly should already have been familiar with the cost of focusing on aesthetics from the effects of his curved glass façade of the Vdara Hotel in Las Vegas (2009) – another “unique” icon.116 This 180m tall parabolic reflector created a “death ray” that singed newspapers, burnt the hair of guests, and melted the plastic furniture from around the pool below. Not that it seems to have affected the number of visitors. Indeed, it has even been suggested that such “comically villainous” architecture could conceivably be what

The Cube, 2010; 5 Broadgate, 2016), Grimshaw architects (Newport Station, 2011; Cutty Sark renovation, 2012), Rogers Skirt Harbour + Partners (One Hyde Park, 2011), and Anish Kapoor (ArcelorMittal Orbit, 2012)

116 “The unique silhouette creates one of the most striking design statements in all of Las Vegas and allows guests some of the most breath-taking views this city has to offer” – from the Vdara website (http://www.vdara.com/about/architects-vision.aspx)
makes Vdara unique, drawing in all the more sight-seers (and architecture pilgrims) as a result (Wainwright, 2015b).

There are, however, some sites, like Bilbao, where commissioning an icon to create an icon has been successful (from a certain point of view at least). Take, for instance, the story of the Swiss furniture giant, Vitra. Located in the small German commune of Weil am Rhein, just north of Basel, is the Vitra Campus. After their manufacturing facilities were largely destroyed in a fire in 1981, the company commissioned the British architect, Nicholas Grimshaw to design their new buildings, as well as master plan the site. It was believed that Grimshaw’s high-tech designs would reflect well the high level of technical quality found in the Vitra furniture.

The unifying master-plan was scrapped, however, after the head of the company, Rolf Fehlbaum met Gehry and discussed the possibility of a new strategy – one that would allow architects from around the world to exhibit their works on site, without recourse to any wider contextual considerations (such as the form, materials, style or scale of any of the surrounding buildings). The company proudly states that these buildings “reflect a corporate philosophy that does not strive for a uniform image, but presents a variety of positions within the context of an open project”. Gehry’s own contributions – the design museum (located at the entrance to the site) and the factory building (nestled close behind) – already [1989] “feature Gehry’s typical sculptural structural forms.”

Entering the campus, you are greeted by the sight of the design museum: a constructivist jumble of white volumes – like a child’s block model – united by the dull zinc roof that wraps across the top of each form, seemingly holding the chaotic ensemble together. From the exterior, the buildings’ fragmented form and playful swirls provide an interesting sight, as one tries to anticipate the interior spaces that such a configuration promises. Inside, however, the external expression and museological exhibition spaces are not well reconciled.

Figure 11 –The Design Museum: a chaotic muddle of interesting forms and uncomfortable spaces (2014)
Source: author

117 http://www.design-museum.de/en/information/vitra-campus.html
118 http://www.design-museum.de/en/information/vitra-campus.html
After moving through the obligatory spatial sequence of reception-cloakroom-bookshop, any attempt to correlate the memory of the external features with the visitor’s current location will simply result in disorientation and frustration. If not for the ceiling reflecting the roof shape, one could quite easily forget – or at least disassociate – the exterior of the building altogether.\(^{119}\) Norberg-Schulz regards the building disapprovingly as “un-structured”, complaining that “[t]he whole is if anything characterised by a ‘restless indifference,’ it happens without concretising into ‘something,’ with an occurrence that is not a building process and not even an entity in course of ‘configuration.’” (Norberg-Schulz, 2000, p. 348). But there is no reason why Gehry ought to be singled out in this regard.

In addition to Gehry and Grimshaw, the complex now displays offerings from the likes of Álvaro Siza, Zaha Hadid, Tadao Ando, Herzog & de Meuron, and SANAA, as well as a handful of sculptures and smaller iconic structures (such as Jean Prouvé’s Petrol Station, and one of Buckminster Fuller’s Geodesic Domes). The somewhat disparate collection is celebrated on the company website as an “architectural park” composed of “a heterogeneous ensemble of contemporary architecture”.\(^{120}\)

\(^{119}\) See Epilogue

Hadid’s input was the new on-site fire-station (a requirement that Vitra’s insurance company after the fire). More a folly than a functional fire-station, this iconic structure would launch Hadid’s architectural career. On paper the building claims to tick the necessary boxes, boasting a double-story garage for the fire engines, a gymnasium, changing-rooms, and a club room. In reality, it does not pretend to be anything more than an eccentric gesture (and clearly not with a view of breaking into the fire-station design market): the large, sharp-looking pieces of concrete and glass jut out at unwelcoming angles, creating narrowing corridors and awkward spaces. When walking along the corridor (the only regular surface) – flanked on all sides by smooth sloping planes – the visitor may easily feel as though they are losing their balance: a sensation akin to the optical illusion of walking through a fun-house. Vitra explains that “its lack of colour and right angles provides visitors with an unusual spatial experience”.\footnote{http://www.vitra.com/en-ch/campus/architecture}

While this is indeed the case, it is difficult to reconcile the need (or even desire) for a “unique spatial experience” with the task of readying a group of fire-fighters to extinguish a potentially lethal fire. Even the fire-escape plan looks (ironically) like it could create a dangerous bottle-neck effect at the exit. The whole design approach seems to be epitomised by the lighting diagram: an unnecessarily complex abstraction of cuts and coloured LEDs that, while interesting to look at, actually detracts from its primary function (clarifying which switch turns off which light!).\footnote{See Figure 14.}

At the time of my visit, I experienced the building as part of a Vitra architecture tour group (held three times a day in German and twice in English, each lasting about two hours), being shown around with a dozen or so other tourists, cameras in hand. This was unequivocally starchitectural sightseeing. As a sculptural object to be wandered around, contemplated, and photographed, the ‘fire-station’ was undeniably successful. In fact, it has since become a fairly popular conference space and showroom for

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\cite{121} http://www.vitra.com/en-ch/campus/architecture
\cite{122} See Figure 14.
small design exhibitions and presentations. The overall effect then is one of artistic folly – the buildings offer a glimpse into the origins of these now famous architects, with visible allusions here and there to the more expressive gestures that we have come to recognise as idiosyncratic of that particular designer. And while many of these architects (including Gehry and Hadid) have since softened from their constructivist origins (or at least the surfaces of their buildings have), the attitude toward the design remains the same.

After touring the Vitra site for himself, Norberg-Schulz asserted that this penchant for designing objects that could effectively be replaced with any other object anywhere on the planet, shows a blatant disregard for difference (of culture, climate, and economy) and uniqueness (of site and context). In so doing “they have become representatives of a global consumer society” (Norberg-Schulz, 2000, p. 350). Norberg-Schulz laments that...

Sadly what dominates the world of building nowadays is gimmick and novelty. It also happens that many architects allow themselves to be swept away by self-expression instead of interpretations of place, and so confusion takes the place of interaction. (Norberg-Schulz, 2000, p. 299).

We could perhaps make an exception for Vitra and their “architectural park” as simply an advertising device that is not taking itself too seriously. And why should it? The VitraHaus, designed by Herzog & de Meuron (2010) for instance, is under no obligation (practical, legal, moral) to function as a dwelling, despite the fact that its extruded pentagonal forms are clearly reminiscent of a child’s illustration of a generic house, and each of the internal spaces is laid out to give the impression of a lavishly furnished domestic living space. All of this is in agreement with the expectations of the visitor/architectural tourist who has made the trip to this small village specifically to see the architecture and the furniture that the company is trying to promote. And apart from putting greater demands upon the local bus operators running from Basel, the whole experiment would appear to have few consequences for the local environment or residents.

123 The in-situ fire brigade was disbanded within a few years deferring the responsibility to the public fire services of Weil and Basel
124 “fall off your chair folly” according to one architecture critic (Pawley, 1994)
125 For a discussion on how expectations can prime perception, see Chapter Four. The idea of architectural theatricality and the expectation of staging is discussed in the Epilogue
But there are very real concerns about why the starchitectural icon (as building and practitioner) is bad for the profession and worse for the location and its inhabitants.

*Figure 14 - "PLEASE DO NOT TOUCH!!!": lighting diagram at the Vitra Fire Station
Source: author*
Losing touch

Fuelled by the image economy, or “iconomy” (T. Smith, 2008, p. 11), the icon of the starchitect has three primary consequences. Firstly it encourages a misconception of the architectural practice by proffering the single Messianic figure (the architect). Because individuals are far more marketable than faceless companies – a phenomenon long understood by charities and politicians alike – the publicity often gets directed at a single principle architect, so much so that they become synonymous with the company (such as Rem Koolhaas (OMA) and Ben van Berkel (UNStudio)). Architect Grant Gibson posits that this is because “we like to be able to put a – preferably charismatic – face to – a hopefully iconic […] – building” (G. Gibson, 2008). Naturally this metonymy is most effective when the practice shares the name (or at least initial) of the principle/s: Zaha Hadid Architects, Foster + Partners, Gehry Partners, Studio Daniel Libeskind, Renzo Piano Building Workshop, etc.126

The image of the architect becomes the image of the practice which then often becomes as important and recognisable as the architecture. This encourages the romanticised notion of the single genius architect: the top-down myth of a lone figure whose whimsical musings and capricious napkin sketches become as iconic as the eventual built project. This, in turn, leads to a certain expectation that each newly iconised building will be preceded by the ‘eureka’ doodle.127 This necessarily promotes the notion that all design ideas originate from this single virtuoso and by implication, that everyone else within the company simply transcribes these concept sketches into designs of the building (which should then of course resemble the original sketch).128

This leads to the second negative consequence of the celebration of starchitectural icons: encouragement of copy-cat designs. This occurs at all levels of profession but particularly in the works of students and new architects who see the interest and adoration doled out upon a Libeskind or a Hadid, and immediately look to emulate sharp-jagged shapes, or gloopy amorphous forms, without the experience or facilities of the large firms that specialise in these designs. And more crucially, often without the direct lived-experience of the buildings that are being imitated. What gets copied is what the copier perceives, which in this instance

126 American architect and educator, Michael Sorkin points out that recent branding strategies have even influenced firms through the perceived need to trademark themselves with logo-like acronyms such as OMA, FOA, MAD, MVRDV, SOM, HOK, and so on (Sorkin, 2005, pp. 28-29).

127 As was indeed the case with the Crystal Palace: the original design sketch created by Paxton on blotting paper was framed and hung as an icon in the Stationary Court of the exhibition itself (McKean, 1994). For examples of entire publications devoted to the sketches of a single living architect, see T. Vischer (1997), Farthing and Davey (2009); Fujimoto (2012); Bredekamp, Daalder, and Rappolt (2004)

128 The corollary of this single-figure fame, is of course, that the public is only too aware who is to blame when a building fails: the (singular) architect. In a recent publication in the New York Times (Deamer, 2014), architect and educator, Peggy Deamer, defended architectural practices against the negative media attention that has recently been aimed at a handful of starchitects. Rather, Deamer contests, the media should take some responsibility for encouraging (or at least enabling) an environment of spectacularisation.
is simply the appearance, since this is, in many respects, the easiest element to identify and replicate.\textsuperscript{129} If this remains the only parameter, the subtleties of craftsmanship, engineered details, or thoughtful and embodied design decisions present in the original may get overlooked (or simply not seen at all), and therefore fail to appear in the forgery.\textsuperscript{130}

A third consequence of the starchitect phenomenon, is that this success can often come at the expense of pigeon-holing oneself: by highlighting (intentionally or otherwise) their USP in a visibly discernible manner, architects risk defining themselves by this or that gesture, effectively branding themselves and their work. Architecture of this kind is at risk of becoming “a plastic expression of personality”, an ornamental prerequisite that is to the building “what the signature is to the painting” (W. Benjamin, 2002, p. 20). With this comes an inherent affirmation bias such that people (potential clients and general public) will look for these idiosyncrasies to confirm that they have gotten what they were after: a signature of authenticity. And as with the copy-cats, any future design may be measured by how well it appears to typify that established style.

In other words, any design lacking these elements is seen to be a diluted version of the architect’s own work. In order to produce ‘a Hadid’ for instance, it not only has to be designed by (Zaha) Hadid, it also has to look like a Hadid, that is to say, have enough visible similarities to the signature style that someone unfamiliar with the building could say “that looks like a Hadid”. Failure to comply with either of these results in buildings that instead provoke the comment, “that looks like a Hadid-rip-off”,\textsuperscript{131} or worse still, no comment at all: the building exhibits so few recognised motifs that it is simply dismissed as another non-Hadid building. Thus, the resultant design tends to be so prototypical of the client’s (and public’s) image of what that particular starchitect’s buildings should look like, that failure to produce it results in a lack of commission, while success results in an inevitable ‘icon’ (that ironically looks like every other one of their iconic structures).

Describing the cost of notoriety, Gehry explains that “[…] since Bilbao, I get called to do ‘Frank Gehry Buildings’. They actually say that to me. We want a ‘Frank Gehry’. I run into trouble when I put a design on the table and they say, ‘Well, that isn’t a Gehry building’. It doesn’t have enough of whatever these buildings are supposed to have” (Gehry, in Jencks, 2005, p. 9). And Gehry is not the only big-name architect feeling the pressure to conform to a particular mould (albeit one of his own making). In his autobiography,

\textsuperscript{129} And can be achieved without having to leave the comfort of the office. For an interesting discussion on the conflict between Eastern and Western ideas surrounding copyright and imitation as flattery in architecture, see Brisbin (2016)
\textsuperscript{130} A trend that has recently swept China, and includes replicas of London’s Tower Bridge, Le Corbusier’s Chapelle de Notre Dame du Haut, and the small Austrian village of Hallstatt (Wainwright, 2013b).
\textsuperscript{131} Typical of comments posted on websites featuring the work of students of her design studios (MacLeod, 2014). See also Fairs (2013)
Breaking Ground, Daniel Libeskind describes the reaction of judges to a competition entry he was invited to submit: “Thanks a lot, the people said, but we’re a little disappointed by your proposed design. Why? ‘We were hoping for a Libeskind-type building’” (Libeskind, 2004).

This situation has left architecture in something of a “double-bind” (Jencks, 2006, 2011), where both architect and public become tired of the same old “icons” – designs that fall “midway between iconography and iconology” (Jencks, 2011, p. 243) – but neither seem capable of breaking the cycle.

Some may of course, still fail to see the pervasiveness of these issues, and simply dismiss them as the price of stardom, like paparazzi to movie stars. In any case, the problems of the starchitect are just that – isolated events pertaining to a few extraordinary buildings or architects. But what if it was not?

It is simple enough to point to the fantastic spectacles of Vitra or Las Vegas, and draw parallels between these modern sites of novelty and entertainment, and those of the world exhibitions that “provide access to a phantasmagoria which a person enters in order to be distracted.” (W. Benjamin, 2002, p. 18). Each of these may be classed as a “heterotopia of illusion” (Shane, 2005, p. 259): self-contained buildings or environments “where space and time could be collaged at will and codes of behaviour and fashion could change very rapidly.” (Shane, 2008, p. 262). In these examples, there remains a clear threshold condition that separates fantasy from reality, one that is recognised and accepted by client and patron alike. An isolated island separated from everyday quotidian experience by a sea of difference. Indeed, it is this difference that makes it distinct, novel or exciting. But what happens when the lines between these two sites blur – when a spit appears to connect the island to the mainland, creating a cultural tombolo. How does this alter the experience of each, and what does it mean for the inhabitant?

Take, for instance, the experience of place that is presently being constructed in the Saadiyat Island project, Abu Dhabi. Created by tourism for tourism, the new cultural district of Abu Dhabi exhibits an embarrassment of architectural riches, including: the new Louvre Museum (Jean Nouvel); a Performing Arts

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132 Heterotopia’s for Michel Foucault, are not to be confused with utopias or dystopias, but rather, they are places that “are outside of all places”. Architecturally, it exists as a space that is “at once absolutely real, connected with the space that surrounds it, and absolutely unreal” and self-referential. Among Foucault’s various principles of “heterotopology”, he states that the “heterotopia is capable of juxtaposing in a single real place several spaces, several sites that are in themselves incompatible” such as the theatre, cinema, or Oriental garden (Foucault, 1986). Jencks suggests that the mixed-use skyscraper is the heterotopic archetype of Late Capitalism (Jencks, 2011, p. 123)
133 In fact the $8.5 billion CityCenter megaproject in Vegas – which already exhibits works from Viñoly (Vdara hotel and spa), Foster + Partners (Harmon Hotel), Libeskind (The Crystals), and César Pelli (Aria Resort and Casino) – has been described by Jenks, as “the biggest urban ‘heterotopia of illusion’ in the world” (Jencks, 2011)
134 Hence the expression, what happens in Vegas stays in Vegas.
135 The Tourism Development and Investment Company – TDIC – and an independent public joint stock company – the sole shareholder of which is Abu Dhabi Tourism Authority: http://www.saadiyat.ae/en/home
Centre (Zaha Hadid); a Maritime Museum (Tadao Ando); the Sheikh Zayed National Museum (Foster + Partners); and a Guggenheim Museum (Frank Gehry).\textsuperscript{136}

Not to be outdone by its neighbour, the most populated city in the United Arab Emirates (UAE), Dubai, continues to raise the starchitectural bar to dizzying new heights. The city currently features nearly one thousand high-rise buildings, including the tallest building in the world\textsuperscript{137} – the Burj Khalifa (828m; 163 floors) – and the world’s tallest residential building – the Princess Tower (414m; 101 floors).\textsuperscript{138} Continuing the philosophy of \textit{bigger is better} (Jeffreys, 2014), Dubai can also lay claim to having the world’s largest shopping mall (Dubai Mall); fountain (The Dubai Fountain); and (soon) underwater hotel (The Water Discus hotel).

Already boasting \textit{iconic} architecture from Foster + Partners,\textsuperscript{139} Zaha Hadid,\textsuperscript{140} and SOM,\textsuperscript{141} Dubai has big plans for future development of the city (including a \textit{Museum of the Future}). Projects presently under construction include \textit{Palm Islands} (two artificial residential islands in the form of a palm trees, comprising 520km of private beaches), \textit{The World} (an artificial archipelago in the form of a map of the world), \textit{Dubailand} (555 billion entertainment complex – the largest collection of theme parks in the world – at a combined site size of over 100 square miles), \textit{Dubai World Central International Airport} (designed to be the largest in the world in both physical size and passenger volume), and the no less grandiloquent, \textit{The Universe} (another artificial archipelago in the form of the Milky Way and the Solar System).\textsuperscript{142}

A report published from the Oxford Business Group in 2014 proclaims that:

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\textsuperscript{136} Many of which are yet to break ground (2017)

\textsuperscript{137} Currently (2017). The foundations have already been laid for Calatrava’s $1billion USD \textit{Dubai Creek} tower which, when completed (2020), will exceed the height of the Burj Khalifa (Frearson, 2016)

\textsuperscript{138} \textit{The Pentominium}, designed by Aedas, will supersede this if it receives the funding which has currently left the building unfinished since 2012. If completed to the original specifications, the $400 million residential skyscraper will stand at a height of 516m tall (2017)

\textsuperscript{139} The Index (2012), as well as master-planning a creative community village in the Dubai Design District (D3)

\textsuperscript{140} $360million mixed use development project, \textit{The Opus}, is presently under development and due for completion 2017-2018. The official website is already advertising it as designed “by the world-famous Dame Zaha Hadid and a destination in its own right [...] it is an architectural wonder made of engineering at its most impressive” (http://www.omniyat.com/project/theopus/)

\textsuperscript{141} To date, three skyscrapers: the Burj Khalifa, the Rolex Tower and the Canyvan Tower

\textsuperscript{142} One entrepreneurial resident even plans to build a “little Lyon” (\textit{Lyon-Dubai-City}), that will include nearly 1,000 acres of housing, museums, hotels, office spaces, cafes, restaurants, shopping malls, and courtyards, all directly inspired by his favourite French city (Sciolino, 2008).
The can-do spirit of Dubai has determined to produce a clutch of giant theme parks, the world’s biggest Ferris wheel, a replica of the Taj Mahal four times the size of the original and a giant frame that will allow visitors to view new Dubai from one side and old Dubai from the other.\textsuperscript{143} (Jeffreys, 2014, p. 179)

‘Spectacle’ (from the Latin, \textit{spectāculum}, ‘a sight’) and ‘spectator’ (from \textit{spectāre}, ‘to watch’) share the same etymological root of \textit{specere} (to look). This is the inevitable conclusion of the spectacular architecture of iconicity: spectacles make spectators of us.

It is clear that this focus on the visual necessarily negates the non-visual and phenomenological aspects of the embodied experience of architecture, promoting instead, a distanced and contemplative appreciation of it as an art-object: “look at everything; touch nothing” W. Benjamin (2002, p. 805, [m4,7]). An experience that, as Benjamin recognised, is quite different from the immersive experience of habitual architecture (W. Benjamin, 2008, p. 805, m4,7). This is true for most users, with one notable exception: tourists.

\textsuperscript{143} The ‘giant frame’ referred to here, otherwise known as The Dubai Frame, will be a 150m high, 93m wide, building in the form of a picture frame, designed literally to frame views of the city. For further discussion on development in Dubai and spectacularisation, see Hu (2015)
“The spectator is at home nowhere, for the spectacle is everywhere.” (Debord, 2006 [1967], p. 23).

Following Debord, it is clear that the iconicity is an architecture for tourists: the spectators of spectacles – the seers of sights. For the tourist, everything is new, every building novel. A fleeting trip provides no time in which to acquire the embodied familiarity of habit or sociocultural practices. These sights (sites) of architectural novelty and entertainment – or architainment\(^{144}\) – are directed towards generating revenue by increasing tourism and other outside investment. Cities of architainment become places in which “The inhabitants […] no longer feel at home” (W. Benjamin, 2002, p. 23). It is an “other-directed architecture” (Jackson, 1970, p. 64): “architecture which is deliberately directed towards outsides, spectators, passers-by, and above all consumers” (Relph, 1976, p. 93).

This has not always been the case. The first sight-seers were physical seers of sites. Indeed, sightseeing was a discursive exercise that was “understood to involve primarily a reflective and disciplined exercise of the ear and the tongue.” (Adler, 1989, p. 9). By the eighteenth century travel had become sufficiently popular to require local guides who would be expected to create itineraries that ensured “the best articles […] be seen in every town in order of merit” (Young, 1905 [1789], p. 255). Eye-witness accounts were prized for their direct authority, the veracity of which could be furthered through the presentation of local artefacts or curiosities, exhibited in categorised cabinets: a scientific taxonomy of place. In a manner fully in keeping with the Enlightenment sensibilities of the time, “a style of travel performance [was created] which privileged the eye for comprehensive inventory” (Adler, 1989, p. 24).

Travel has since become easier and more affordable than ever in history, and as such, “planeloads and busloads of tourists [are] being conducted from sight to site.” (Relph, 1976, p. 243).\(^{145}\) Each sight is usually decided in advance from a guide book of must see buildings, objects, or events. The qualitative experience is thus reduced to a quantitative exercise, such that “they [the tourists] hardly notice the character of the surroundings, they simply check off the starred numbers in their guide books and hasten to the next one. They do not experience the place” (Rasmussen, 1964, p. 16).\(^{146}\) Souvenirs are recognised as part of the touristic experience, but are often simply products of the brand that further its iconic status – kitsch.

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\(^{144}\) “where architecture and entertainment are fused in museums and malls, downtowns and strips, theme parks and parking lots” (Fernandez-Galiano, 2005, p. 2)

\(^{145}\) See also Eckbo (1969, p. 29), for a similar observation of the changing demographic of tourist destinations

\(^{146}\) Perhaps my favourite literary example of this is from Forster’s A Room with a View, in which the protagonist, Lucy, is visiting Florence, Italy, but loses her guidebook (Baedeker), and consequently finds herself unable to recognise beauty: “a wonderful building […] it contained frescoes by Giotto, in the presence of whose tactile values she was capable of feeling what was proper. But who was to tell her which they were? […] There was no one even to tell her which, of all the sepulchral slabs paved the nave and transepts, was the one that was really beautiful, the one that had been most praised by Mr Ruskin.” (E. M. Forster, 1978, pp. 40-41). For a discussion on how our perception of something/one/where may be primed by our prior knowledge or beliefs regarding its hermeneutical background, see S. Gallagher (2011) and Chapter Four. For an elaboration of tactile values, see Chapter Three, and Berenson (1907 [1896]); Pinotti (2005)
trinkets and novel commodities, often in miniaturised form of an iconic structure, or at least with its shape emblazoned upon it\textsuperscript{147} – but the evidence of experience is mostly captured and collected in countless photographs. These sights are then uploaded and “shared” with the world via social media sites (see Dorrian, 2008).\textsuperscript{148}

The consequences of this type of development are manifold, and include the gentrification of local environments (whereby local inhabitants are pushed out by increased costs of inner-city living); a significant shift in the local economy (residents predominantly fulfil the job ‘opportunities’ provided by these constructions, primarily in the service and entertainment industry); the local area necessarily becomes embroiled in the tourist industry (which exacerbates the previous points); and encourages further speculative development (a new high-end high-rise hotel, convention centre, sporting arena, cultural centre or museum of some sort to further attract tourists and increase brand visibility).\textsuperscript{149} And this, as we have seen, rarely fulfils the optimistic logic of the Bilbao effect upon which the commissioning of many of

\textsuperscript{147} See for instance, the Gaudi themed “collector’s items” on sale, including Gaudi themed bottle openers, pens, spoons, fridge magnets, ties, and salt & pepper shakers: http://shop.artgaudi.com/en/home.html

\textsuperscript{148} “Abraham Moles once wrote that the monuments of Europe are being worn out by Kodaks” (Frampton, 1981).

\textsuperscript{149} See for instance the proposal for Museum of the Future in Dubai: http://www.dezeen.com/2015/03/06/dubai-museum-of-the-future-innovation-design-oval-shaped/
these speculative spectacles are founded – the reality can be risky, expensive, misdirected and at odds with the task of architecture: to create meaningful places and afford dwelling (Norberg-Schulz, 1976, p. 5).

Thus, we find that these superficial and bombastic environments, engender a particular type of tourist (sightseer), one that mirrors the same cavalier and voyeuristic attitude to place as the architecture that surrounds them. This type of other orientated architecture is indicative of what the geographer Edward Relph termed “placelessness” (Relph, 1976).

According to Relph, Placelessness is the antithesis of place, “a sort of non-place quality [...] If a place is somewhere, placelessness can be anywhere” (Relph, 2009, p. 24). This phenomenon is manifest both within the built environment (one “without significant places”) and in the attitudes towards place from which these environments were created (one that is either insensitive to – or simply ignorant of – the significance of place) (Relph, 1976, p. 143). Relph warns that this placelessness “is becoming increasingly dominant, and that it is less and less possible to have a deeply felt sense of place or to create places authentically.” (Relph, 1976, p. 80).

Placelessness is particularly evident in so called global cities, where the architecture of spectacle is most pronounced, and every building aims to add significance to a place by deliberately imposing itself upon its surroundings. The irony, of course, is that since every building moves towards creating something unique, nothing stands out – everything converges at a heterotopic event-horizon: all these spectacular novelties and unique icons naturally tend towards similarity and the banal. The heterogeneous becomes homogenous and results in “the undermining of the importance of place for both individuals and cultures, and the casual replacements of the diverse and significant places of the world with anonymous spaces and exchangeable environments.” (Relph, 1976, p. 143). This is understood by many as an effect of mass-media communication and globalisation in general (Adam, 2012; Casey, 1998).

In addition to other-directed architecture of the spectacle, placelessness is also being archived through other means, two of the most pronounced being products of uniformity and disassociation. Both of

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150 Relph lists the main ways in which the media effects architecture and place:
A. Mass communication and modes of diffusion of mass attitudes and fashions of kitsch.
B. Mass culture of dictated and standardised values; maintained by but making possible mass communications.
C. Big business and multi-national corporations: these encourage standardisation of products and needs to ensure economic survival, and they supply the objects of kitsch through the application of technique.
D. Central authorities: these encourage uniformity of places in the interests of efficiency and through the exercise of a uniform power.
E. The economic system: the abstract system, dominated by technique, which underlies and embraces all of the above. (Relph, 1976, p. 220)

151 Including “Other-directedness in places (Landscape made for tourists; Entertainment districts; Commercial strips; Disneyfied places; Museumised places; Futurist places); Uniformity and standardisation in places (Instant new towns and suburbs; Industrial commercial developments; New roads and airports, etc.; International styles in design and
which are defined by Norberg-Schulz, as lacking in character or atmosphere (Norberg-Schulz, 1976). In the case of the former, “flatscapes” (Banham, 1967), are created by monotonous environments and an impoverishment of stimuli. To a large extent, this is due to developers profiting from an overreliance on standardisation and repetition. This is based on the post-Fordist model of mass-production, which maintains that it is more efficient and economical to reproduce the same element in bulk (Kaminer, 2011). This is compounded further by the reasoning that it is also quicker and less costly to reuse the same architectural drawings for one project (with particular materials and specifications) in another (at least in part if not in whole). This task is facilitated, and even passively encouraged, by the adoption of modern CAD software which not only affords easy reproduction and replication, but invites the use of a standardised library of predefined elements. The results are particularly evident in low socio-economic housing developments – sterilising the character of entire streets and suburbs (Pallasmaa, 2012 [1982]).

![Figure 17 – Flatscapes: Stone Fields housing development currently under construction in Auckland, New Zealand (August 2017)](source: author)

architecture); and Formlessness and lack of human scale and order in places (Subtopias; Gigantism (skyscrapers, megalopoli); Individual features unrelated to cultural or physical setting)” (Relph, 1976, pp. 118-119)
Although Norberg-Schulz first raised these concerns three decades ago, the state of sensory impoverishment has only recently become conspicuously widespread and more a part of our daily architectural experiences, as Howes observes:

Our time is largely spent indoors, where architecture and design collude to provide an environment as devoid as possible of tactile stimulation. In the modern university or office building floors and walls are flat and smooth, corridors are clear, the air is still, the temperature is neutral, and elevators carry one effortlessly from one level to another. (Howes, 2005c, p. 29)

In the case of disassociation, this is something akin to other-directed architecture, except that it directs itself to everyone, irrespective of culture, age, religion, background, etc. To achieve this it remains as ambiguous as possible, claiming affiliation to no particular place or people, let alone that in which it is situated. These have recently been described as non-places. The notion of Non-places has been revived in contemporary theory by the French anthropologist, Marc Augé, who employs it to describe a built environment that is “in opposition to the sociological notion of place [...] and a whole ethnological tradition with the idea of culture localised in time and space” (Augé, 1995, p. 34). Where the notion of place is generated (in part) by the strength of its narrative history (Norberg-Schulz, 1976), non-places “cannot be defined as relational, or historical, or concerned with identity” (Augé, 1995, pp. 77-78). Such non-places are (primarily) sites of transition or transaction: airports, motorways, service stations, railway stations, supermarkets, hotel chains, large retail parks, etc. According to Augé it is precisely these “installations” of “supermodernity” that are “the real measure of our time” (Augé, 1995, p. 79).

What we are left with, in each instance of placelessness, is “a benumbing uniformity of architecture, on the one hand, and a rootless architectural anarchy, on the other.” (Pallasmaa, 2012 [1995], p. 318), both of which continue to contribute to a weakening of a sense of place (Pallasmaa, 2012 [2010]-a). In these situations, a sensory imbalance is created from an absence of non-visual stimuli and a distressing abundance of visual stimuli from competing spectacles vying for our attention. This may soon lead to an attention atrophy, as Benjamin notes: “The greater the shock factor in particular impressions, the more vigilant consciousness has to be in screening stimuli” (W. Benjamin, 2006, p. 178). This (an)aestheticisation (Leach, 1999) culminates in whole environments which, Pallasmaa asserts, grow “overwhelming for the senses and emotions, suppresses and dulls the imagination, empathy and compassion” (Pallasmaa, 2009, p. 134). In the homogenous environment, continuous exposure to under-stimulating conditions can lead to

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152 Originally coined by Melvin Webber in 1964
153 A site of personal, historical, cultural, political, or religious significance (aspects that contribute positively to its atmosphere). See Chapter Four, and Tuan (1975, 1997, 2011 [1977]-a)
154 See also (Pallasmaa, 2012 [1983], p. 50)
155 See also W. Gallagher (1993); Hayne and Fleming (2014); Lockard (2014)
boredom, lethargy and depression. If unresolved, they may even induce hypochondria, psychosomatic illness, and excessive introspection. Lockard warns that “prolonged under-stimulation can result in behavioural breakdowns” in which sufferers become “highly suggestible and grow increasingly solipsistic, no longer capable of acknowledging an external reality beyond the confines of their immediately perceivable surroundings” (Lockard, 2014, p. 22).

Along with alienation, comes the sensation or perception of otherness and a discontent for the surroundings that consequently feel foreign. This is what it is to be out of place.\textsuperscript{156} The symptoms often characterised with this sensation include anorexia, fever, insomnia, palpitations, and, perhaps unsurprisingly, persistent reveries of places where they felt more ‘emplaced’ (Howes, 2005d): a longing to feel the comforting embrace of a more familiar habitat.\textsuperscript{157} The converse is to feel a strong sense of belonging most readily associated with dwelling and the sense of being at-home.\textsuperscript{158}

\textsuperscript{156} Not to be confused with homeless, because even those without a fixed or permanent residence still find places which are more homely or familiar and comforting to them
\textsuperscript{157} Since 1678, this affliction has been known as \textit{nostalgia} (McCann, 1941)
\textsuperscript{158} (Cresswell, 2015; Relph, 1976; Seamon, 2002; Tuan, 2011 [1977]-a). The term ‘home’ has been treated with a degree of contempt by some critics of architectural phenomenology who view it as wistful nostalgia on the part of the author (Heynen, 2000; Massumi, 2002), promulgating “an unreconstructed humanism” (Paterson, 2011, p. 267). This is not my intention. I am more interested with the inherent relationship between the embodied act of dwelling and the development of habits that in turn generate a habitat. See next section.
Brandscapes and body-ballets

Habit – as a repeated practice or custom – comes from the Old French, *habiter*, meaning to dwell, reside, frequent, which in turn is derived from the Latin *habilis* (easy to handle) and *habere* (to have, to hold or possess). Tourists, by their very nature as transient sight-seers, do not dwell: they do not inhabit the spaces they visit. This distinction was articulated by Benjamin, who believed that...

[b]uildings are appropriated in a twofold manner: by use and by perception – or rather, by touch and sight. Such appropriation cannot be understood in terms of the attentive concentration of a tourist before a famous building [...] Tactile appropriation is accomplished not so much by attention as by habit. As regards architecture, habit determines to a large extent even optical reception. (W. Benjamin, 2007, p. 240)\(^{159}\)

This duplicitous apperception is key to recognising the importance of the body and the non-visual senses in our perception of architecture and the world around us. This same recognition is elucidated further by Martin Heidegger in his description of our way of being (as *Dasein*) and the way in which we exist in our “average everydayness” (Heidegger, 2001 [1962], p. 69). What we are concerned with here is the parallel we find between Heidegger and Benjamin’s dual modes of apperception: readiness-to-hand (*Zuhandenheit*)/tactile (as distracted and habitual), and present-at-hand (*Vorhandenheit*)/optical (as intentional and concentrated).

For Heidegger, there are essentially three modes of being: being as equipment (whose way of being is *readiness-to-hand*), as a substance (whose way of being is *present-to-hand*), and as *Dasein* (Heidegger, 2001 [1962], p. 67). Dasein, a compound of *Da-* (Being) and *Sein* (there), is used to refer to those beings for whom their being is an issue (Heidegger, 2001 [1962], p. 32).\(^{160}\) In other words, those of us who are capable of self-reflection and realisation.\(^ {161}\)

Equipment, for Heidegger, consists of entities which always refer beyond themselves to other equipment, and the way in which they are used within a wider network of intentionality (in Heidegger’s words, it forms a “referential totality”).\(^ {162}\) Put simply, a pen is equipment for writing, but can only be understood as such if

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\(^{159}\) This same tourist/inhabitant dichotomy has been expressed more recently by Perez-Gomez: “In architecture, the rituals and events framed by a building are transient, just as speech is and the experience of architecture is qualified by these events [...] the meaning of architecture, like that of a poem, is re-enacted by the participant. It is surely different to ‘visit’ a building as a modern tourist than to experience it through ritual, or to live and work in it.” (Pérez-Gómez, 2006, p. 67)

\(^{160}\) “Dasein is an entity which in each case I myself am.” (Heidegger, 2001 [1962], p. 78). An expression adopted from Kierkegaard: “what is the self? The self is a relation that relates itself to itself” (Kierkegaard, 1983).

\(^{161}\) Essentially human beings excluding those that are too young to recognise their being, or those who are cognitively impaired or otherwise inhibited from forming this level of comprehension (Heidegger, 2001 [1962])

\(^{162}\) “Verweisungs-ganzheit” (Heidegger, 2001 [1962], p. 99, see n.2)
there is also paper (equipment to write on). Moreover, the pen and paper form part of a wider totality including other entities such as ink, a desk, books etc. What is important is that we do not experience the pen ‘thematically’ as this ‘Thing’ (of such and such a size, shape, colour, material, weight, density, and so on) within this network of other Things. Rather, Heidegger maintains, we simply grasp its being through the act of writing: “In this readiness-to-hand, there is no self-conscious reflection about what or how things are. One already knows.” (Relph, 1985, p. 18).¹⁶³

This can, however, only happen once we are familiar with the entity and possess an embodied understanding of it – if we are presented with an entity that we have hitherto not encountered or have little prior knowledge of, it would remain conspicuous as an object of circumspection, and requires a concentrated and deliberate manipulation in order to understand it (as equipment). Equally, no amount of thematic study (reading about pens, how to hold them, how to use them, what they are for) can truly lead us to understanding them as equipment: “No matter how sharply we just look at the ‘outward appearance’ of Things [...] we cannot discover anything ready-to-hand.” (Heidegger, 2001 [1962], p. 98). And only through active engagement is its ‘manipulability’ [Handlichkeit] discovered.

In other words, it is through repeated use and practice that entities develop an embodied familiarity and their active employment becomes “a matter of habit” (W. Benjamin, 2007, p. 240). At this point the entity becomes “proximally ready-to-hand” and in so doing, “withdraws” [zurückziehen] from our conscious attention (Heidegger, 2001 [1962]).

Although neither Benjamin nor Heidegger discuss architecture explicitly in their writings¹⁶⁴ this has not prevented a number of scholars from taking up their ideas and applying them to architectural theory.¹⁶⁵ David Seamon, for instance, employs the idea of habitual embodiment to describe the phenomenal experience of our environment (Seamon, 2010). Borrowing the term, ‘body-subject’ from Merleau-Ponty (Merleau-Ponty, 2005 [1945])¹⁶⁶ to describe the way in which the body operates intelligently but pre-reflexively in space (Seamon, 1980, 2010, 2015), Seamon explains how a “body-ballet”, or more recently,

¹⁶³ Which is to say, “In dealings such as this, where something is put to use, our concern subordinates itself to ‘in-order-to’ which is constitutive for the equipment we are employing at the time.” (Heidegger, 2001 [1962], p. 98)
¹⁶⁴ There are few texts, or more precisely, fragments of texts, where Heidegger or Benjamin do discuss architecture: for Heidegger, see Building Dwelling Thinking (2001 [1952]) and “…Poetically Man Dwells…” (2001 [1954]). For Benjamin, see The Work of Art (2002 [1936]-b), Naples (1978) and The Arcades Project (W. Benjamin, 2002) as a social commentary on modernity in general as it is reflected in contemporary architecture.
¹⁶⁶ Note that ‘body-subject’ does not appear in this English translation. Instead ‘body-schema’ is used to translate the French ‘schema corporal’. Seamon is keen to use the alternative translation – body-subject – as he believes this better conveys in English the pre-cognitive lived intentionality of the body, to which the original term refers. For a more detailed explanation, see Seamon (2013a, note 4)
“body routine” (Seamon, 2007), may develop and become incorporated into the body-subject (Seamon, 1980). This is often referred to as tacit knowledge or more simply muscle-memory.

When these body-ballets are able to be sustained for a considerable period of time, or used in concert with other related body-ballets, a “space-time routine” is established (Seamon, 1979, 1980, 2015). Such routines are most readily apparent in the actions of those whose livelihoods require their bodies to have learnt (and therefore be able to effortlessly, and repeatedly, enact) a particular sequence of gestures or movement (such as a sportsperson, craftsman, musician or artist).

Based on years of empirical qualitative research, Seamon has repeatedly observed that there are certain locations or environments that afford particular space-time routines, and those that actively inhibit or otherwise resist them (Seamon, 2014a). To summarise...

In a supportive physical environment, time-space routines and body-ballets of the individual may fuse into a larger whole, creating a space-environment dynamic called place-ballet. The place-ballet is a fusion of many time-space routines and body-ballets in terms of place [...] It generates a strong sense of place because of its continual and regular human activity.

(Seamon, 1980, p. 159 original emph.)

The notion of emplacement is derived from a concern that while embodiment erases one duality (mind and body) it reinforces another: body and environment (Howes, 2005d, p. 7). Strictly speaking, however, this is not the case, and although contemporary theories of embodiment (in various fields) may gloss over or even emphasise such a division, the original German term, life-world (“Lebenswelt”: Husserl) – from which the notion of embodiment is derived – “connotes essentially the prereflexive, taken-for-granted dimensions of experience, [and] the unquestioned meanings, and routinized determinants of behaviour.” (Buttimer, 1976, p. 81). As such, both life-world – and world-hood (“Weltlichkeit”: Heidegger) – are explicitly dependent upon this notion of being as always already “Being-in-the-world” (in-der-Welt-sein) – another Heideggerian “compound expression” that articulates the “unitary phenomenon” (Heidegger, 2001 [1962], p. 78) of what it means to exist as Dasein: “Being-in-the-world is an essential structure of the Dasein’s being” (Heidegger, 1988, p. 169) – a fundamental intertwining of person and place (Malpas, 2012b).

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167 See also Seamon (1979, 2015)
168 As Leatherbarrow notes, “our legs and hands, or sedimented in them and renewed throughout our lives, is a tacit but operative sense of their range of reach and ability, a motor power or ‘I can’ that measures itself against the resistance offered by the surrounding context.” (Leatherbarrow, 2000, pp. 65-66)
169 The anthropologist Tim Ingold has similar mistaken reservations for not using the term ‘embodiment’ (Ingold, 2011, p. 135, and p.249, n.4)
170 A chiasmatic relationship, as Merleau-Ponty would say (1968a): “we situate ourselves in ourselves and in the things, in ourselves and in the other, at the point where [...] we become the others and we become world.” (Merleau-
This is our **natural attitude** and resists any form of division or separation. Indeed, this intertwining of “corporeal, temporal, and environmental dimensions” (Seamon, 2015) is a fundamental ontological assumption of phenomenology (Seamon, 1987). Thus, from...

[...] a phenomenological perspective, there is no dualistic person/world or people/environment relationship. Instead, there is only a people–world immersion, entwinement, and commingling whereby what is conventionally understood as two conceptually – person/world, subject/object – is realized as one existentially – person-intertwined-with-world (Seamon, 2013b, p. 144)

This is a central principle of phenomenology: “a philosophy for which the world is always ‘already there’ before reflection begins—as “an inalienable presence” (Merleau-Ponty, 2005 [1945], p. vii). It therefore makes little sense to consider ourselves as distinct from our environment. Thus, to talk about place is to talk about the body, and vice versa, for “However tacit its role may be, your body is the very vehicle of implacement, and is *sine qua non* for being-in-place” (Casey, 1998, p. 239). If “the making of places” is, as Norberg-Schulz affirmed, what “we call architecture” (Norberg-Schulz, 1976, p. 170), then in making architecture we simultaneously remake ourselves. Which is to say, that “not only does the man make his world, but the world makes the man [...] they are dialectically interrelated.” (Bloch, 1979, p. 45), and “*who or what* we are is thus dependent on *where* we are” (Malpas, 2012a, p. 12).

To recapitulate, architecture of our time is a product of our (visual) culture. This privileging of vision has thus come at the cost of a “forgetting of touch and the bodily senses” (Paterson, 2007b, p. 60). This has generated an increase in placelessness from overstimulating environments of iconic spectacles (that favour the eye), to understimulating spaces of characterless monotony. Each inhibits meaningful inhabitation and the production of habits, resulting in psychological distress and alienation. Our sense of touch and the nonvisual bodily senses are not only basic to our perception of place, they are key to it (Field, 2003 [2001]).

What we must remember therefore, is that our sensory perception is (in part) a cultural construct, and as such the modern hierarchy of the senses (with vision in pride of place) is not predetermined or set in stone (Classen, 1993). As Marx reminds us: “The forming of the five senses is a labour of the entire history of the world down to the present.” (Marx, 1997, p. 136). This is not to say, however, that it is reversible or that we may be able to return to a time before visual technologies (and any humanist notions of such an idyll should be treated with due suspicion). But it is suggestive of a certain neurosensory plasticity when it

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Ponty, 1968b, p. 160). The reciprocal experience of this immersive relationship is discussed further in Chapter Two and Chapter Four.

171 See also Introduction

172 This is true of society in general, and it is indeed telling that the latter part of the phrase, “seeing is believing, but feeling’s the truth” has been all but forgotten (Bronner, 1982, p. 352)
comes to how we perceive our surroundings. Thus, while we may not be able to see less, there is no reason why we cannot feel more.

This theory is already being practiced within parallel disciplines (in particular marketing and product design) that have looked beyond the visual, and returned instead to the body. Researchers in these fields have long recognised the pitfalls of focusing too narrowly on vision alone, and are exploring the opportunities offered by appealing to the non-visual senses as well.

The massive investment that companies make into visual marketing is evident in their various branding strategies and advertisements (in magazines, bill boards, television commercials, and internet pop-ups). Less obvious perhaps are the other sensory cues that work in concert with the visual, and without which even the most attractive product would fail to make the same lasting impression – or worse, fail to achieve “sensory congruency” (Schifferstein & Spence, 2008).173

Furthermore, studies have shown that the more sense modalities that are engaged by the product, the richer the experience will be (Bahrick & Lickliter, 2000; Spence, 2002). Audio cues, for instance, also affect the experience and perception of an interaction (Spence & Shankar, 2010; Spence & Zampini, 2006). This is an observation that has been recognised in the automotive industry since the mid-twentieth century (Packard, 1957, p. 111), and has since led major companies, such as Harley-Davidson, to try and trademark their particular engine sound, in other words, to brand their signature sound (Schifferstein & Spence, 2008).

Similarly signature smells (or branded ‘smell-scapes’) help sediment a particular brand image, and conversely, evoke that same brand and associations with the scent in question (Miller, 1993). British Airways, for instance, created a trademark smell for their corporate lounges, Meadow Grass, to greet their customers and engender a sense of luxury and belonging (Ellison & White, 2000). Certain products have even had their tactual properties trademarked (tactile branding). Examples include the shape of traditional Coca-Cola bottles, and the weight distribution of a particular television remote controller (produced by Band and Olufsen)(Spence & Gallace, 2011).

This is the logic of “sensory marketing” – a design strategy that goes beyond considering the visual appeal of an object or the way it is displayed in the shop window, and considers how potential consumers will interact with the product, how they will sensually experience and perceive the value of it, and what effect or influence this has on whether they will make that final purchase. This has opened up a whole new area of research that is evolving daily, as attitudes and associations are developed between certain sensory experiences and positive or negative connotations of the user.

173 If the expectation is that the product ought to possess a particular sensory quality but doesn’t, then it will not matter how visually aesthetic it is, it will disappoint and not be purchased.
Clearly, such associations have cultural and historical parameters which would need to be considered, such as “differences in scent preferences based on gender, ethnic background, and age”, which would encourage greater specificity and (in theory) greater sense of satisfaction within the particular demographic that it was designed for (Krishna, 2013, p. 165). This has implications for understanding how we engage with objects, materials, and environments. Not least of all, the tactual efficacy of an object has incredible significance, since it is in the sense of touch – as “our most intimate sense” (Rodaway, 2011 [1994]) – that we place the most trust:

After the eye the hand is the first censor to pass on acceptance, and if the hand’s judgement is unfavourable, the most attractive object will not gain the popularity it deserves. On the other hand, merchandise designed to be pleasing to the hand wins an approval that may never register in the mind, but which will determine additional purchases. (Sheldon & Arens, 1932, pp. 100-101)

A positive touch increases the likelihood of a positive feeling about the object touched. A negative or unwanted tactual experience, by contrast, is met with disgust or shock.174

Such observations have been around for hundreds of years, and continue to be one of paramount import for product designers, but it is only in the last few decades that these ideas have been applied in earnest to architecture. Even now it is the architecture of hospitality and retail that is leading the way.

From the moment you enter a modern department store, your senses are pounced upon by the environment: doors open effortlessly without requiring you to touch them, a current of hot (or cold) air assails you from some unseen location, popular or slow music (musak) follows you around the store dictating your pace, while smells associated with ‘fresh’, ‘clean’ or ‘newness’ are everywhere (possibly even supplemented with bread and coffee from in-house cafes). Indeed, it is a poor store-designer (or brave gimmick) that decides to sterilise their commercial environment by minimising all non-visual stimulants (or at least the excitatory cues). Within these “temples of commodity capital” (W. Benjamin, 2002, p. 32 [A2,2]), the maxim, as Giedion reminds us, is to “Welcome the crowd and keep it seduced” (cited in W. Benjamin, 2002, p. 40 [A3,6]).

But as industrial capitalism has transformed into consumer capitalism, so too has the means of seduction: from the ocularcentrism of the image-economy (iconomy) to the enveloping atmosphere of the “experience economy” (Pine & Gilmore, 1998). In this instance, “[e]verything seems designed to create a

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174 See Chapter Two on the phenomenology of interpersonal touch
sense of hyperesthesia” (Howes, 2005b, p. 288), such that even the “traditional practice of sight-seeing has been eclipsed by the strategy of engaging all the senses” (Howes, 2011b, p. 64).

If we extend these findings into the architectural discourse, it is easy to appreciate a whole array of atmospheric generators that we can corporeally feel, and how few of these may be conveyed by vision alone: the feel of the chair we sit in; the temperature and humidity of the room; the proximity of the furniture and dimensions (experiential, not geometric) of the space; the various materials and textures around us; the acoustic qualities of the space; the quality of the lighting; background music; the company we are with or even the mood we are in. Indeed, knowledge of the way in which inhabitants are likely to engage with a particular space, how it will be perceived during these interactions, and how their senses work in concert to inform and encode these experiences, is of the utmost importance (Schifferstein & Spence, 2008).

Take for instance, the sensory-design of a casino, where “every light, every shade of colour, every sound, every aroma, every texture, and every taste is deliberately chosen. There is a reason why every sensory cue you perceive is there”: to influence your actions by encouraging certain space-time routines that are beneficial to the company (Krishna, 2013, p. 159). Such sensory considerations – extending well beyond the look of the place – directly contribute to how we feel and the way in which our environment touches us (Zumthor, 2006).

This sensory manipulation or humaneering (Sheldon & Arens, 1932) of our built environments is sometimes treated dismissively by architects as simply window-dressing or architectural scenography (Frampton, 1985), and is often seen as inconsistent with how potential clients understand the role of the architect and the influence of affective design. Nevertheless, “[t]he importance of attending to the multiple sensory dimensions of objects, architectures and landscapes is quickly becoming a central tenet of material culture theory” (Howes, 2006, p. 161), and “companies all over the world are nowadays well aware of the fact that their ultimate aim and value is not in their products as such, but in the experiences they offer to consumers” (Schifferstein & Hekkert, 2008, p. 649). While the social logic of the last century may be

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175 As Benjamin reminds us, “architecture is not primarily ‘seen,’ but rather is imagined as an objective entity [Bestand] and is sensed by those who approach or even enter it as a surrounding space [Umraum sui generis [...] Thus, what is crucial in the consideration of architecture is not seeing but the apprehension [durchspüren] of structures” (W. Benjamin, 1999 [1932], p. 670)
176 For a distinction, see Scott (1914, p. 234)
177 See Chapter Four
178 One architectural firm even had to rebrand their work as perception design in order to encourage the type of business they wanted (Kelley, 2005).
expressed by the familiar imperative of “look, but don’t touch”, the new century has welcomed us in with its multisensory atmosphere: look, touch, feel.\textsuperscript{179}

The time is now ripe, as Mallgrave observes, to reconsider how we experience the built environment (Mallgrave, 2013a). It is, therefore, “a worthwhile task” within architecture, to conduct this investigation “from a more-than visual perspective, one that attends to a range of sensory-somatic and affective experiences that include, but crucially are not limited to, the visual.” (Paterson, 2011, p. 263). This is the purpose of a felt-phenomenology, which is developed over the next three chapters.

\textsuperscript{179} Some critics have even suggested that the “brandscape’s turn to atmosphere [...] signals a line of flight from the individual ocularity long associated with spectacle, re-organising architecture practice in the process” (Krupar & Al, 2012, p. 261).
Chapter Two: Embodied encounters

Figure 18 – The Mighty Hand: Auguste Rodin, Bronze (1906). Photographed at the Legion of Honor, San Francisco, CA (2014)
Source: author
In the eagle and the hawk, in the gazelle and in the feline tribe, the perfection of the eye is admirable; in the dog, wolf, hyena, as well as in birds of prey, the sense of smelling is inconceivably acute; and if we should have some hesitation in assessing a more exquisite sense of taste to brutes, we cannot doubt the superiority of that of hearing in the inferior animals. But in the sense of touch [...] man claims the superiority.

- Charles Bell, *The Hand*
Sir Charles Bell was in good company,\textsuperscript{180} when he asserted that it is through the sense of touch that man excels beyond all other animals (Bell, 1834). Touch is “the one which entitles a living thing to be called sensitive” (Aquinas, 1994, p. 187),\textsuperscript{181} and “the sense that makes sense possible” (Ross, 1998, p. 52). Touch is the first sense to develop and at just six weeks old a (blind-deaf) foetus can react to tactile stimuli (Atkinson & Braddick, 1982; Bremner, Lewkowicz, & Spence, 2012).\textsuperscript{182} Our sense of touch is also the last to leave us, and it is therefore our oldest sense,\textsuperscript{183} “as old as life itself” (Hall, 1990 [1966], p. 42; Sachs, 1988, p. 28). Since all other senses develop from the skin, the sense of touch is also known as the mother of all the senses (Montagu, 1978; Pallasmaa, 2008 [1996]).

In spite of its necessity – and all its zoological claims of superiority – our sense of touch “remains largely neglected, forgotten” (Paterson, 2007b, p. 1). Contrariwise, our sense of vision has enjoyed almost complete sovereignty in our everyday sensorial dealings. Indeed...

> It is symptomatic of the priority given to sight, that we find it necessary to remind ourselves that the tactile is an important dimension in the perception of the built form.

(Frampton, 1985)

But what is the importance of touch? Pallasmaa claims that “architecture articulates the experiences of being-in-the-world and strengthens our sense of reality and self” (Pallasmaa, 2008 [1996], p. 11).\textsuperscript{184} I argue that it is our sense of touch that affords us the very possibility of having a world, which is to say, of having this sense of self (agency), reality, and being-in-the-world, of which Pallasmaa speaks. Touch is therefore not only crucial to our existence, but also fundamental to our experience of architecture.

Drawing upon the literature of tactual-philosophy (from Husserl and Heidegger to Ratcliffe and Fulkerson), I develop a felt-phenomenology (Paterson, 2007a, 2009) in order to better articulate “how the world touches us” (Merleau-Ponty, 1964, p. 19) and “how we touch our world”(Pallasmaa, 2007-b, p. 58).

\textsuperscript{180} See for instance, Pliny (Pliny, 1997, pp. book X, 415-417), Aquinas (1994) and Aristotle (1907, 421a)

\textsuperscript{181} Aquinas continues “[…] In the first place touch is the basis of sensitivity as a whole; for obviously the organ of touch pervades the whole body, so that the organ of each of the other senses is also an organ of touch” (Aquinas, 1994, p. 152)

\textsuperscript{182} “At two months’ gestation, the fingers will grasp when the palm is touched; at three months, the fingers and thumb will close” (Field, 2003 [2001], p. 87)

\textsuperscript{183} (Aquinas, 1994; Field, 2003 [2001]; Montagu, 1978),

\textsuperscript{184} The relationship between architecture and our sense of reality is a recurrent theme for Pallasmaa. See for instance: “Architecture’s task is to reveal the essences of the real” (Pallasmaa, 2012 [2003]-b, p. 344); “The power of architecture is in its ability to strengthen the experience of the real” (Pallasmaa, 2013b, p. 136); and “A fine architectural work generates similarly an indivisible complex of impressions, or ideated sensations, such as experiences of movement, weight, tension, structural dynamics, formal counterpoint and rhythm, which become the measure of the real for us.” (Pallasmaa, 2009, p. 103)
Making sense of touch

In a purely tactile sense, we experience architecture in numerous ways [...] In walking across a tiled floor or the gravel of a garden, our feet experience the texture and relative character of the material we engage – profoundly in some cases. In standing close to a window in cold weather we lose body heat and feel cold. A fire in a hearth on a holiday [...] will not only raise our thermal comfort but also our social and affective spirits [...] We know the cool touch of materials like glass and metal, and the relative warmth of wood [...] A stair can be luxurious or onerous to climb in relation to our feet and legs; a handrail can be comfortable or awkward to the grasping hand.”
(Mallgrave, 2011, p. 203)

Mallgrave here hints at the seemingly disparate components of our tactual perception. This then is the first challenge to remembering touch – knowing what touch is. This necessarily raises a number of questions regarding the nature of touch: what does touch sense? What is it that touches? And what does it mean to touch?

As Aristotle put it, “It is a problem whether touch is a single sense or a group of senses” and “if touch is not a single sense [...] there must be several kinds of what is tangible.” (Aristotle, 1907, 422b). This would indeed seem to be the case – in a single moment of physical contact we may perceive a myriad of object properties: size, form, texture, solidity, elasticity, oiliness/stickiness, relative temperature, mass, smoothness, moisture/febrility, motion/inertia, and vibration.

But simply possessing multiple sensory subsystems – as touch clearly does – does not necessarily mean that our sense of touch is not a single sense. The philosopher, Mathew Fulkerson, has recently offered a robust argument for understanding touch as “a single unified modality” (Fulkerson, 2014, p. 1). Contrary to Aristotle’s “waste-basket” model of touch,185 Fulkerson explains that touch is only multisensory in so far as all our other senses may also be considered multisensory. It could be argued for instance, that touch is multisensory because the perceptual experience includes different content from different sources (such as heat and pressure).186 But as Fulkerson is quick to point out, this is also true for vision, which uses different classes of receptors (cones and rods) as well as different subsystems to process the various aspects of visual content (motion, shape, colour, etc.).

When we hear the sound of a phone ringing from a certain location, and see a phone in that location, we perceive the phone as the object that is emitting the sound. There is an “associative relation” between

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185 Which uncritically comprises “everything left over” after the other four less ambiguous senses have been accounted for (Ratcliffe, 2015, p. 20)
186 Also known as the Shared Content Criterion (SCC) (Fulkerson, 2014, p. 28)
these two sensations (Fulkerson, 2014, p. 21). But they may yet be experienced independent of each other:
closing my eyes, I still hear the phone, and contrariwise, covering my ears I still see the phone. The fact that
the object may have these two sensorial qualities does not mean that they are perceived by the same
sense.
With touch, the various tactual components are immiscible – the phone may feel hard, hot, large, square,
smooth, heavy, dry, and so on. These properties are felt together, and it makes little sense to attempt to
feel how hard it is while trying not to feel its texture or relative temperature for instance. From a
phenomenological perspective of everyday touching, we may instead say that touch is a uni-sensory
system: “a collection of sensory sub-systems that work together to assign, or bind, sensory features […] to
the same set of objects.” (Fulkerson, 2014, p. 33).187 And while any touching experience may be composed
of different sensory sub-systems, the particular tactual make-up is not a measure of touch.
In addition to the exteroceptive phenomena (the traditional notion of five outwardly orientated bodily
senses), we also have the deeper and less defined interoceptive sensations that are always already
engaged, though often below our level of conscious awareness. When we awake each morning we are
aware of the position and movement of our limbs without having first to reflect upon where they are or
where we left them the night before (Bell, 1834, p. 150). This ‘self-knowledge’ or embodied awareness of
our own movements and bodily positioning is known as “proprioception” (Sherrington, 1907).
The proprioceptive system is informed by cutaneous, kinaesthetic and vestibular sensations. Kinaesthesia
(Bastian, 1887) or kinaesthesia is also concerned with the body’s movement in space, but concentrates on
information received from proprioceptive receptors in the muscles (muscle spindles), tendons (the Goli
tendon organs), and joints (the joint capsule mechanoreceptors). These combine to provide information on
muscle deformation (muscle length and tension) over time (Hatwell, Streri, & Gentaz, 2003, pp. 17-18);
while the vestibular system provides feedback regarding our sense of balance and inertia derived from the
semi-circular canals of the inner ear.188 Together the elements of this system form a more complete picture

187 “Feature binding […] involves the predication or assignment of distinct features to perceptual objects. These
features are bound to objects, not each other”, as is the case in multisensory perception. (Fulkerson, 2014, p. 33)
188 “When a blind man, or a man with his eyes shut, stands upright, neither leaning upon, nor touching aught; by what
means is it that he maintains the erect position? The symmetry of his body is not the cause; the statue of the finest
proportion must be soldered to its pedestal, or the wind will cast it down” (Bell, 1834, p. 149). To be sure, it is the
vestibular system, though not alone. Other senses that actively contribute to the balance function include vision,
audition, and the sensitive receptors in the soles of our feet. It has even been demonstrated that “the sensory
information transmitted via the contact between the handrail and the pulp of a little finger can be enough to give the
body correct balance” (Lundborg, 2014, p. 76). For more information see Backlund (2004); Norrsell, Backlund, and
Göthner (2001)
of how and where we are. Without this “sixth sense,” notes Bell, “the proper sense of touch could hardly
be an inlet to knowledge at all.” (Bell, 1834, p. 148).

Any motion or gesture requires that we have accurate and up to date knowledge of the current state and
situation of our body and our environment. Without the somatic senses, “what we can perceive through
cutaneous sensation alone [would bear] little resemblance to the rich phenomenology routinely associated
with our sense of touch.” (Ratcliffe, 2013, p. 137).

In addition to these somatic senses, physiology also distinguishes a third category of embodied sensation:
the viscera. Input from the visceral system includes sensations from the internal organs as well as the
body’s autonomic and homeostatic processes which monitor and control heart rate, blood pressure, and so
on. Some authors question the inclusion of visceral experiences, due to their relatively limited contribution
to our tactual awareness (J. J. Gibson, 1968): sensory information is comparatively vague and nebulous in
origin, with no definitive boundary or border; much of the viscera is, strictly speaking, insensitive (with few
nerve endings); and a lot of what we feel is seemingly automated or beyond our conscious control – just
general feelings of movement, pain or discomfort (Leder, 2005). The simplest response may therefore be to
omit it from our investigation.

But asked differently – can architecture affect our heart rate, blood pressure, and elicit an embodied
emotional response that we feel inside? - and the simplest response would now seem too dismissive and
myopic. This is why Jenifer M. Barker differentiates between the two ways in which we talk about visceral
responses: “Either we use the term in its specific, medical sense to refer to the internal organs […] or we
use the term more vaguely, to refer to […] feelings, emotions, and intuitions.” (Jennifer M. Barker, 2009, p.
122). With regard to the former, their active involvement in our lives is clearly essential but remains almost
entirely imperceptible in our day to day activities. “In the second sense, though, our viscera overpower

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189 Even when we are at rest we are never truly without motion or feeling – any attempt to remain still or
“motionless” requires a concerted and practised action in which the body receives and responds to information about
the relative position of muscles and the forces required to resist gravity and other external influences (Tallis 2003: 306).
190 For further discussion on these somatic senses and their contribution to tactual perception, see also Fulkerson
(2014); Paterson (2007b); and Ratcliffe (2008)
191 (Bell, 1834; Katz, 2013 [1925]; R. Tallis, 2003). Imagine losing the awareness that you’re holding a cup of hot coffee
in the moment before trying to greet someone or open a door (like the old joke, about the person with poor bodily
awareness: “how did [x] burn their ear? They were ironing and the phone rang”)
192 See also Ratcliffe (2008, p. 302; 2015, p. 7)
193 There is an anecdote in Bell (1834, pp. 126-127), which describes how “a noble youth of the family of
Montgomery” suffered a fall leaving a gash in his chest that allowed access to his heart and lungs. Both the nobleman
and the “admirable Harvey” were astonished at the fact that these inner organs could be handled without either of
them being able to know – through feeling – that it was his heart and lungs that was being touched.
everything else. Nervousness, excitement, dread, passion – these things are felt deeply” (Jennifer M. Barker, 2009, p. 123).194

It is this second sense that the architect Peter Zumthor has in mind when he describes our architectural perception as “visceral” (Zumthor, 2010 [1998], p. 77),195 and what the phenomenologist Herman Schmitz refers to as “corporeal feelings” (as opposed to mere “bodily sensations”) (Schmitz, et al., 2011). This affective touch is one of the most significant ways in which a place can touch or move us (and is considered in more detail as this thesis unfolds).196

With all of this in mind, Mallgrave suggests that “it is far more useful to view the somatosensory activities in themselves as a rich complex of interrelated sensory systems,” and proposes a more holistic conception of touch that “includes the homeostatic and visceral systems, musculoskeletal system, proprioception, the vestibular system, and other senses involved in touch.” (Mallgrave, 2011, p. 200).

Hence, we find that although touch clearly “encompasses extremely heterogeneous phenomena” (O'Shaughnessy, 2001 [1995], p. 176), in practice the tactual experience we have of an object is felt as a unitary phenomenon (Loomis & Lederman, 1986); in other words, different physiological processes working synergistically. This is a notion consistent with the thinking of Merleau-Ponty when he says that...

> The unity and identity of the tactile phenomenon do not come about through any synthesis of recognition in the concept, they are founded upon the unity and identity of the body as a synergic totality. (Merleau-Ponty, 2005 [1945], p. 369)

So far so good. But “It is also a problem,” claims Aristotle, “what is the organ of touch?” (Aristotle, 1907, 422b). If you were to ask a child what is hearing? Or what is seeing? They could quite reasonably point to their ears or eyes and explain that it is the act of perceiving the world through that particular sense organ. They may even qualify this assertion by covering their ears or closing their eyes and identifying what type of sensory information was omitted in each case. And this would accord with Aristotle’s sensory taxonomy, that defines colour as “the special object of sight, sound of hearing, [and] flavour of taste” (Aristotle, 1907, 418a). But what of touch?197 What is it that we cover in order to discover what touches, for we cannot stop touching – it is the sense that is always on (Nancy, 2008a, p. 151). And whereas with the other four senses the difference “is too plain to miss [...] in the case of touch the obscurity remains” (Aristotle, 1907, 423a).

194 For a more succinct summary, see also Jennifer M. Barker (2011)
195 Mallgrave claims that when Zumthor says this, he is actually “referring to architecture as a haptic process” (Mallgrave, 2011, p. 189)
196 See Chapter Three and Chapter Four
197 As for smell, Aristotle explains elsewhere that smell is complicated by the fact that the perception of odour is inseparable (in man) from respiration (Aristotle, 1951c). Aristotle actually has quite a lot to say about the nose, but not in De Anima (see Aristotle, 1951a). For more on this, see Johansen (1997, pp. 226-251)
One suggestion is that the skin is the organ of touch, since “the tactile experience […] adheres to the surface of our body” (Merleau-Ponty, 2005 [1945], p. 369). But by far the most common synecdoche or allegory of touch is the hands. The hand has always been a source of interest and admiration: Anaxagoras believed that the possession of hands was what made man the most intelligent of all animals (Aristotle, 1882a); Aristotle claimed that “the hand is the tool of tools” (Aristotle, 1907, Bk.III, 432a); Immanuel Kant is said to have referred to the hand as “the outer brain” (Katz, 2013 [1925], pp. 4, 28), and that it “is the

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window to the mind” (R. Tallis, 2003); while Charles Bell pointed to the hand as proof of the existence of God (Bell, 1834).

Our hands are also incredibly communicative: we use them to gesture for help or assistance, to welcome and greet, to deny and dismiss, to threaten or surrender, to pray and plead, to indicate and implicate. All of these messages are spoken by the hands, and while some are restricted to those who know the language, most hand gestures have universal currency that transcends the limitation of verbal communication, as the physician John Bulwer notes:

The _Hand [...]_ speaks all languages, and as an _universal character of Reason_, is generally understood and known by all Nations, among the formal differences of their Tongue. And being the only speech that is natural to Man, it may well be called the _Tongue and general language of Human Nature_ (Bulwer, 1644, B2)

The philosopher Gaston Bachelard suggests that our hands dream (Bachelard, 2006 [1942], p. 107), while the poet Rainer Maria Rilke similarly observes that our “Hands have stories; they even have their own culture and their own particular beauty. We grant them the right to have their own development, their own wishes, feelings, moods, and occupations” (Rilke, 2014, p. 50).

It is not surprising therefore that the hand is oft considered the organ of touch. And why not? The hands are one of the most sensitive areas of our entire bodies; the hands are often responding to intentional or instrumental movements, and so have a privileged position within our embodied awareness; and our culture of covering our bodies for warmth, protection or modesty exposes our hands to a greater variety and breadth of sensations (Rodaway, 2011 [1994]). The versatility and dexterity of the hand is indeed worthy of contemplation and the wealth of literature on the subject is testament to this.

However, this positive association has its own shortfalls: it risks reinforcing the mistaken assumption that touch is limited to the intentional physical contact that takes place at the ends of our fingers. This has the unfortunate consequence of contributing to the forgetting of touch, as Radcliffe explains:

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199 Hand quotes attributed to Kant, such as these, are somewhat spurious in origin: a search for the “window to the mind” quote will likely direct the researcher to other authors – such as Sennet (2008) – who refer back, not to Kant, but to Kant as cited in Tallis (2003), who in turn fails to provide any further reference for this. Similarly, the quotation used by Katz also offers no additional source information. Both quotations here are presented since it is interesting how frequently they are used in research on the hands and touch, but in all likelihood neither exists in its pithy format, and is most likely a creative recapitulation (Stuart, 2013)

200 Such as sign-language, secret handshakes, the catcher’s hand signals in baseball, palmistry/chiromancy, and the Nritya Hasta – the gestures used in traditional Indian dances

201 (Bell, 1834; Napier, 1993 [1980]; Sheldon & Arens, 1932; R. Tallis, 2003)

202 See in particular, Bell (1834); Bulwer (1644); Cheiro (1897); L. A. Jones and Lederman (2006); Lundborg (2014); Napier (1993 [1980]); Pallasmaa (2009); Radman (2013); R. Tallis (2003); Wilson (1999); Wing, Haggard, and Flanagan (1996).
Figure 20 - Language of the Hand
Source: Bulwer (1644, p. 151)
an appreciation of the phenomenology of touch has been marred not only by an overemphasis on vision but also by a tendency to take touch with the hands as the paradigmatic example of touch, from which generalizations are then made about all tactual experience.

(Ratcliffe, 2013, p. 132)

Touch is therefore usually understood (along with taste) as an intimate or *proximal sense*, that requires contact in order for perception to take place. This is contrasted with the *distal senses* (vision, audition, and olfaction) (Hatwell, et al., 2003). This distinction is misleading however.

Where we begin and end is determined and reinforced through continuous touching: “tactile processing contributes to our mental bodily representation while our mental bodily representation influences tactile processing” (Fulkerson, 2014, p. 102). The body schema is, after all, already extended beyond the smooth surface of glabrous skin (Ratcliffe, 2008). Our hair and our nails are embedded with nerve fibres that can be stimulated by the slightest of displacements anywhere along their length. But the plastic nature of our body image also affords us a temporary extension of our body boundaries via tools and appendages. Through habit, practice, and familiarity, we may temporarily absorb a range of prostheses into our body schema so successfully that they achieve a sort of perceptual invisibility.203 This has the effect “of dilating our being-in-the-world, or changing our existence by appropriating fresh instruments” (Merleau-Ponty, 2005 [1945], p. 165).

Everyday examples of temporary tactual extensions include: eating with utensils (where the firmness or softness of the food is felt through the knife, fork, or chopstick); the roughness of the road felt through the seat of a car; the texture of bread felt through a breadknife; or even wearing a hat with a feather in it.204 The classic example is that of the blind man’s walking cane, where it is not the cane that is felt, but the objects that come into contact with it, such that the textures at the end of the cane are transferred into the hand:205 “its point has become an area of sensitivity, extending the scope and active radius of touch, and providing a parallel to sight” (Merleau-Ponty, 2005 [1945], p. 165). It would be inaccurate therefore to say that the blind man does not feel the pavement simply because he does not touch it directly with his hands or skin. Rather, his “sense of touch exceeds [his] bodily outline” (Ihde, 1973, p. 95) and so “the boundary between perceiver and perceived has shifted outward” (Ratcliffe, 2013, p. 145).

This can be explained neurologically by the strengthening or weakening (through use or atrophy) of various synaptic connections and pathways in the sensory and motor cortex. The representation of the hand within

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203 What Heidegger describes as “proximally ready-to-hand” (Heidegger, 2001 [1962], pp. 141-142)
204 To use Merleau-Ponty’s example: “A woman may, without any calculation, keep a safe distance between the feather in her hat and things which might break it off. She feels where the feather is just as we feel where our hand is.” (Merleau-Ponty, 2005 [1945], p. 165)
the cortical body map is plastic, and may expand or contract depending on how we use it (as it does for every part of the body). But since the total map-space is finite, any increase in one body part will cause a slight reduction in those surrounding it – a local anaesthetic in the arm will quickly shrink its cortical representation, while also expanding that of the neighbouring representations (such as the hand) and temporarily increasing its sensory acuity (Lundborg, 2014).

In his research on blindness, the eighteenth century encyclopaedist, Denis Diderot, also observes that the blind do not simply experience their environment at the end of a stick, but open themselves up to a richer form of spatial perception: “The blind man of Puiseaux judges of his nearness to the fire by the degrees of heat; of the fullness of vessels by the sound made by liquids which he pours into them; of the proximity of bodies by the action of air upon his face.” (Diderot, 1916 [1749], p. 78). In his later *Addition*, Diderot makes similar remarks of a blind woman, Madame de Blacy: “she knew by the feeling of the air whether the weather was cloudy or fine, whether she was walking in a square or a road, in a road or a cul-de-sac, in an enclosed room or open space, in a vast apartment or a small room.” (Diderot, 1916 [1783], p. 150). As Diderot put it, the blind “saw by means of [their] skin” (Diderot, 1916 [1749], p. 107).

This is perhaps the first literary reference to “facial vision” whereby the presence or absence of objects at a distance is sensed tactualy:

One wants to put up a hand to protect oneself, so intense is this awareness. One shrinks from whatever it is. It seems to be characterised by a certain stillness in the atmosphere. Where one should perceive the movement of air and a certain openness, somehow one becomes aware of a stillness, an intensity instead of an emptiness, a sense of vague solidity (Hull, 2016 [1990], p. 23)

Thus, an absence is not necessarily experienced as an absence of sensation, as Merleau-Ponty observes: “If I touch a piece of linen material or a brush, between the bristles of the brush and the threads of the linen, there does not lie a tactile nothingness, but a tactile space devoid of matter, a tactile background” (Merleau-Ponty, 2005 [1945], p. 368). This tactile background is a necessary precondition for other tactual encounters to emerge into the foreground of our conscious awareness. This is evident in our use of tools and prosthesis: for the blind man both the hand-cane and the cane-ground sensations are present, but only “one [cane-ground] tends to stand in the centre of the focus while the other fades to a fringe awareness” (Ihde, 1973, p. 96). He does not simply stop feeling at the point of contact between the hand

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206 So great is the blind man’s non-visual perception that “there is no risk of his mistaking his wife for another, unless he was to be the gainer by the change” (Diderot, 1916 [1749], p. 78)
207 See also Rodaway (2011 [1994], pp. 49-50) and Ingold (2002, pp. 273-274)
208 This sentiment has been recently echoed by Ratcliffe (2013, p. 144)
and the tool, and at any time the focus may be shifted back to this fringe component (hand-cane).\textsuperscript{209} Thus, the question of where our sense of touch begins and ends is not as simple or obvious as it may first appear (Ihde, 1973).\textsuperscript{210}

Furthermore, while it is true that we are always already \textit{in touch} with ourselves and the world around us, not all of these tactual experiences are meaningful. Indeed, a touching encounter is about significant contact rather than just contact (or lack thereof) (Ratcliffe, 2013, p. 150). It is interesting to reflect upon the nature of our tactual perception and how we make sense of what we sense, not least because of the fact that much of it is primed by our own sociocultural background.

Consider “the list of five senses [that] is learned by every child.” (J. J. Gibson, 1968, p. 48): vision, aurality, olfaction, taste and touch. This pentomic model of the senses is well established in western civilisation, ever since Aristotle.\textsuperscript{211} But why only five senses?\textsuperscript{212} It is certainly not a universal standard. In Buddhist cultures, for instance, the inner sense (“second sight” or “intuition”) is often considered a sixth sense (Metzner, 1996). The Hausa of Nigeria recognise only two senses: sight and everything else (Ritchie, 1991). In the nineteenth century Austrian philosopher, Rudolf Steiner, distinguished twelve separate senses: “These are the senses of touch, life, movement, balance, smell, taste, sight, warmth, hearing, speech, thinking, and the sense of I,” each align with the twelve signs of the Zodiac (R. Steiner, 1990 [1963], p. 50). In the case of Aristotle, he assigned each sense with one of the worldly elements: vision with water,\textsuperscript{213} audition with air, smell with fire,\textsuperscript{214} and touch (and taste)\textsuperscript{215} with the earth (Aristotle, 1951c).\textsuperscript{216}

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\textsuperscript{209} This is nicely illustrated by Ratcliffe in his description of writing and feeling the hand-pen/pen-paper relationship slide with tiredness (2008, pp. 311-313; 2012, p. 423)

\textsuperscript{210} This confusion regarding the circumscription of the body is also observed by Heidegger (2001 [1987], p. 85)

\textsuperscript{211} (Classen, 1993; Jütte, 2008; Paterson, 2007b)

\textsuperscript{212} Or for that matter, why no other senses, like that of duration, or gravity, or even the spacing between the senses? (Nancy, 2008a)

\textsuperscript{213} Since “the eye consists of water” and is “translucent” as well as being “more easily confined and more easily condensed than air” (Aristotle, 1951c, 438a-438b)

\textsuperscript{214} Because “odour is a smoke-like evaporation, and smoke-like evaporation arises from fire” (Aristotle, 1951c, 438b)

\textsuperscript{215} Taste is considered “a modification of touch” (Aristotle, 1951c, 441a), since “what is tasted is always something that can be touched” (Aristotle, 1907, 422a) and “the food of all living things consists of what is dry, moist, hot, cold, and these are qualities apprehended by touch” (Aristotle, 1907, 414b)

\textsuperscript{216} Some scholars state that Aristotle associated the five senses with the five elements, including “the quintessence” (or “ether”/ “aither”) (see, for instance, Classen, 1993, p. 2). I have not, however, found this to be the case: Aristotle posits that the senses could be correlated “with one of the \textit{four} elements” (my emphasis) and proceeds to conjoin taste and touch since these are the most fundamental and bestial senses that all living creatures are thought to have (see previous note) (Aristotle, 1951c, 438b). Aristotle does advocate for a fifth element, \textit{aither}, as that of which the heavens are composed, but it remains imperceptible for us (or more accurately, we remain insensible to it), and therefore has no associated sense organ (hence, the subject of a fifth element is most frequently discussed in the \textit{physical treatises} (Aristotle, 1951d, 1951f) and not in those concerned with perception, physiology or sensation (e.g. Aristotle, 1907, 1951c)). For Aristotle’s reasoning on why the number of sense may not be fewer or greater than five, see Aristotle (1951c) and Aristotle (1907, Bk.III), respectively
Having (more-or-less) defined the five senses, Aristotle then proceeded to rank them in an order that remains to this day: vision was declared “the superior sense” closely followed by hearing which also “develop[s] intelligence” (Aristotle, 1951c, 437a). Taste, and especially touch, were denigrated as base senses common to all animals, and those most strongly associated with carnal “self-indulgence” (Aristotle, 2009, Bk.III).

One example of how these culturally inherited values have come to influence our current sensory practices, may be found in the so-called law of contagion, or sympathetic magic: the belief that something (object, animal, person) may be directly influenced by a property or character of something else that it has come into direct physical contact with. Hence, the first law of contagion: “once in contact, always in contact” (Rozin, Millman, & Nemeroff, 1986), or differently put, to touch is to be touched (Ross, 1998, p. 7).

This belief system continues to affect how, who and what we touch (Krishna, 2013; Andrea C. Morales, 2011): it is in effect when people show an interest in modern celebrity relics (such as a shirt worn by a movie-star); when we hesitate to eat food we may have dropped on the floor (even after cleaning); and when, in the shop or supermarket, we reach past the obviously touched product nearest to us, to the seemingly untouched one behind it. Curiously, our perception of the object touched differs in each instance: the shirt worn by someone we admire is positively perceived, and is worth more to us than a new unworn version of the same shirt (or the shirt of a stranger) (Newman & Bloom, 2014; Newman, Diesendruck, & Bloom, 2011), while the touched object in the supermarket is perceived negatively, irrespective of whether or not we have seen the past touch take place (Krishna, 2013; Andrea C. Morales, 2011).

Furthermore, this perception of incidental touchings is not limited to contact with people. Items in physical contact (even if it is just the packaging) with other items that we associate with feelings of disgust (such as

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217 See also Aristotle (1951a, Bk.II) and Aristotle (2009, Bk.X)
218 This sensory hierarchy (not unlike the five sense categorisation) did not go unchallenged however: Aristotle tells us how Democritus (“and most of the natural philosophers”) describe all objects of sense as objects of touch, thereby suggesting that each of the other senses is in fact a sense of touch – which Aristotle dismisses as “quite irrational” (Aristotle, 1951c, 442a-442b). Other philosophers, such as Empedocles, also used the term pagamai (flat of the hand or gripper) to refer to the senses in general, such that any description of sensory perception was also a reference to touch (Jütte, 2008).
219 (Frazer, 1959 [1890]; Mauss, 2001 [1950]; Rozin & Nemeroff, 1990)
220 This notion of contamination and reciprocity helps explain people’s perception of religious relics and the powers that such relics were said to possess relative to their class: first class relics might be the bodies of saints, while second class relics could be objects regularly worn or handled by the saints, while third class relics would be any object that had come into contact with either of the above (Classen, 2012)
221 The only exception is when we are told that the touch did not occur recently, or if the person touching was someone we find attractive (Argo, Dahl, & Morales, 2008)
pet food, cleaning products, diapers, etc.) are thence viewed with a similar degree of disgust and circumspection (Andrea C Morales & Fitzsimons, 2007; Rozin, et al., 1986).

Indeed, whether we perceive a tactual experience to be pleasant or not may have little to do with the physical properties of the object touched, or the type of receptors activated in the part of our body performing the touch. The phenomenological meaning of what we feel in each touching encounter is far more complex. Consider the numerous way in which we touch:

- skimming, grazing, squeezing, thrusting, pressing, smoothing, scraping, rubbing, caressing, palpating, fingering, kneading, massaging, entwining, hugging, striking, pinching, biting, sucking, moistening, taking, releasing, licking, jerking off, looking, listening, smelling, tasting, ducking, fucking, rocking, balancing, carrying, weighing...

(Nancy, 2008a, p. 93)

Fulkerson illustrates this further by describing the different feelings involved when touching a wedding ring: objectively, the tactual properties of the ring are relatively stable – cold, round, hard, smooth, etc. Yet what we feel when the ring is on our finger is radically different from the feeling we have when we look at our finger and see that it is missing (or for that matter, the feeling we have when we happen upon its form again in our back pocket). Each has a different emotional composition; each is a product of our tactual perception without being exclusively tangible properties belonging to the object. There is an emotional component that is viscerally felt, and relates to the hermeneutic background or narrative history of the ring and our relationship to it.

Emotions are not a separate or additional feeling that is added to perception, but an immiscible and indispensable element of it (Damasio, 2003). Indeed, our affective states can be influenced and tinctured by the atmosphere of an environment, just as our own attunement – how we find ourselves – colours our perception of the world (Pérez-Gómez, 2016; Ratcliffe, 2002). From his research into recent findings in neuropsychology, Mallgrave concludes that “people largely perceive buildings emotionally through the senses.” (Mallgrave, 2011, p. 188).

Thus, in “architectural terms [emotions] can be described as pre-reflexive response of the human organism to the built environment” (Mallgrave, 2015a, p. 31).

Another component of our perception of touch concerns expectation: immediately after I leave the house in the morning, I plunge my fingers blindly into my bag and feel for my house keys. If I strike something

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222 See also Ratcliffe’s list (2013, p. 150)
223 This theory is developed further in Chapter Four
224 It should also be noted that this line comes from the opening paragraph of a chapter entitled, Hapticity: architecture of the senses (Mallgrave, 2011, pp. 188-206). The concept of hapticity in contemporary architectural thought is revisited in the final section of this chapter
approximating the curve of a key ring or the hard, jagged form of a key, I feel relief and a sense of comfort that I probably haven’t locked myself out. If, on the other hand, I fail to encounter such forms, the search becomes more frantic, and I start to worry that I may have left the keys inside on the counter. Worse still, during my tactual exploration my fingers could be assaulted by yesterday’s spilt lunch (the cold, wet feel of yoghurt or perhaps a squashed banana). In this instance my reaction might well be shock and repulsion, causing me immediately to retrieve my hand (assuming I was not looking for nor expecting to find yoghurt). So our “conceptually grasped significance and explicit expectation do at least inform how things feel to the touch” (Ratcliffe, 2013, p. 146).

Additionally, we also carry out these touchings in a particular way, that is, with a certain feeling or intention depending on its hermeneutical background. This makes the tactual experience of carrying an object like a priceless antique vase is phenomenologically different from carrying a cheap, mass produced vase. This needn’t be defined by their relative monetary value. Other influences, such as sentimental value, also come into play.225

Touch between people – interpersonal touch – is even more complex. In this instance, meaning or significance we attribute to each tactual encounter concerns our perception of who touches, how they touch, and the context in which that touch takes place:226

I am an athlete, and leaving the locker I reach out and pat my teammate on the rump in a gesture of support and encouragement. But while I might never think of it, I know that I wouldn’t do the same to my colleague as he prepares to enter the lecture hall. Or, I might give a friendly and light blow to the chest of a long forgotten high school friend – but I would hardly do the same to my secretary when she came back from vacation.

(Ihde, 1973, p. 101)

Studies have confirmed that the same physical actions (pressure, speed, and body part touched) can be as easily perceived as welcoming or reassuring as it can threatening or disquieting (such as a facial caress or an arm around the waist) depending on the relationship between toucher and touchee.227 Other factors modulating interpersonal touch include age, context, gender, culture, atmosphere, and expectation.228 The common handshake for instance – generally recognised as the most formal of tactual greetings – is a symbol of trustworthiness, friendship, or commitment. Yet even this simple action can have innumerable variations and subtleties that convey a particular message or meaning (Greene & Goodrich-Dunn, 2014, pp.

225 This has clear architectural implications for the way we ascribe meaning or significance to our perceptions which determine to a large extent, how a place makes us feel. See Chapter Four
227 This is well illustrated by Hall’s description of proxemics (1990 [1966], pp. 117-123)
228 See Farmer and Tsakiris (2013, pp. 104-108); Ingold (2002, pp. 183-184); Montagu (1978); Ratcliffe (2013)
128-129). Born from mutual distrust,229 the shaking hand can take many forms.230 Through this single hended embrace we are able to both send and receive feelings, emotions, and intentions with reliable accuracy (Bailenson, Yee, Brave, Merget, & Koslow, 2007; Cohen, 1987).231

Even a brief touch between two strangers can increase compliance and elicit a favourable response: whether it’s a request for money (Kleinke, 1977), to sign a petition (Willis Jr & Hamm, 1980), or to participate in a survey (Hornik & Ellis, 1988). In one study, a librarian was asked to touch briefly the palm of library users when returning their cards. Afterwards the library users who had been touched rated the librarian considerably more favourably than those whose palms had not been touched, and moreover, those affected had almost no recollection of actually being touched (Fisher, Rytting, & Heslin, 1976). This positive impression has also been found in restaurant settings where waitresses were asked to touch (or not touch) the customers on the hand or the shoulder. The effect was measured in the size of the tip presented at the end of the meal, which was noticeably increased for those that touched (despite not rating the quality of the food or service any higher than those who were not touched), and has subsequently been dubbed the Midas Touch effect (Crusco & Wetzel, 1984; see also Erceau & Guéguen, 2007).232

Interpersonal touch is a fascinating area of research that continues to surprise and inform our understanding of touch and of the relationship between ourselves and others. However, this thesis is interested primarily with touch in the context of architecture, and although interpersonal touching no doubt takes place within one sort of architectural context or another, it remains interesting only parenthetically and is not considered a major area of attention for this particular discussion. There are a number of sources of information on interpersonal touch that provide an important contribution to our understanding, but these will not be discussed any further here. Let it suffice to say that interpersonal touch is a powerful communicative contact touch that can influence a person’s judgement, compliance, and attentiveness, as well as express an emotional state or wellbeing.

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229 A gesture of openness and, more pointedly, of not carrying or concealing a weapon, which is why shaking hands is ordinarily limited to the right (commonly dominant) hand (R. Tallis, 2003)
230 See Rev. Sydney Smith on the topic of “hand-shaking” (S. Smith, 1856)
231 In one study (Bailenson, et al., 2007), participants were able to distinguish between anger, disgust, fear, interest, joy, sadness and surprise just by the handshake they received (with an accuracy twice that of chance)
232 This favourable condition was shown to be consistent irrespective of the customer’s gender (Crusco & Wetzel, 1984; Stephen & Zweigenhaft, 1986), and was increased further on sunny days (Mok & Hansen, 1999)
Agency, reality, and Being-in-the-world

Is this a dagger which I see before me,
The handle toward my hand? Come, let me clutch thee.
I have thee not, and yet I see thee still.
Art thou not, fatal vision, sensible
To feeling as to sight? or art thou but
A dagger of the mind, a false creation,
Proceeding from the heat-oppressed brain?

In the above quotation, Macbeth is on his way to carry out the murder of King Duncan. As Macbeth moves further towards committing the act his guilt manifests itself in a series of hallucinations. What is interesting to note here is the process of perception, cognition, and validation that takes place: Macbeth believes himself to see an object in the darkness (a dagger). In order to confirm this observation he gropes for the object and his hands pass through it. The assumption is that if it were real, that is, if it existed in the physical world outside of his mind, it would be tangible. This does not occur, leaving Macbeth to realise that something is amiss, that either his eyes are fooling him, or all his other senses are at fault. To test this hypothesis, Macbeth reaches for his own dagger which he is able to experience physically, and thus deduces that the image is a visual illusion (Shakespeare, 2005 [1606], 2.1.41-50). We may doubt an unlikely sight, an unusual sound, or an unexpected smell, but we would rarely question the reality of something prodded, held, or squeezed. It is this tangible confirmation that is generally understood to be a criterion for reality: if we can feel it, it is real.

Figure 21 - The Incredulity of St Thomas, (1602) by Caravaggio
This is because touch is largely understood to be the sense least susceptible to illusion or deception, and therefore, the “test of reality” (Berenson, 1907 [1896], p. 4). As Jonas explains:

> Reality is primarily evidenced in resistance which is an ingredient in touch-experience [...] Touch is the sense, and the only sense, in which the perception of quality is normally blended with the experience of force, which being reciprocal does not let the subject be passive (Jonas, 1954, p. 516)

Hence, touch “is the sense that makes the world real to us” (Gallace & Spence, 2014, p. 3), and “the sense [...] in which the original encounter with reality as reality takes place” (Jonas, 1954, p. 516).

But why should touch feel more real than any other sensory perception? Phenomenologist, Edmund Husserl, believed that the answer lies with its special reciprocity. This observation of tactual reciprocity has been made by a number of scholars, and is oft proffered as a qualification unique to touch: Seeing does not imply being seen, neither does hearing imply being heard. When we see our eyes seeing (as in the reflection of a mirror) we do not perceive the eyes we see as our eyes. Instead, I see the eyes looking back at me “in the same way that I see the eye of another”. I only “judge indirectly, by way of ‘empathy’” that the eyes I see are mine (Husserl, 2000 [1952], p. 155, n.1). But touching, by contrast, implies being touched simultaneously (Sonneveld & Schifferstein, 2008, p. 141). As Ihde explains:

> I touch the cold wall, and it touches me with its coldness. I touch the slippery vinyl of the contemporary art exhibit, and it touches me with its invented sensuality. I touch the warm flesh of my beloved and her flesh touches me with warmth [...] every time I touch, I am also touched. (Ihde, 1973, p. 98)

When we touch something in the world (other than ourselves) we experience a “double sensation” [“Doppelempfindung”]: we have the feeling of the object touched, and simultaneously, a feeling of

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233 (Gallace & Spence, 2014; Rodaway, 2011 [1994]; Tuan, 1993)
234 This is illustrated in Caravaggio’s painting, The Incredulity of St. Thomas (Fig. 21). It is worth noting parenthetically that another reason why we may feel touched by Caravaggio’s painting is that the very act of observing someone touching or being touched stimulates the same cortical network areas of the brain that are activated when we touch or are touched (Brand, 2017; Freedberg & Gallese, 2007; Lundborg, 2014; Rizzolatti, Fadiga, Gallese, & Fogassi, 1996). This is discussed further in Chapter Three, while the notion of empathetic perception is presented in Chapter Four
235 This is not to say that there aren’t tactual illusions. The most famous perhaps, being the so-called “Aristotle Illusion” (McKeon 1941): “when the fingers are crossed, the one object [placed between them] is felt [by touch] as two; but yet we deny that it is two; for sight is more authoritative than touch. Yet, if touch stood alone, we should actually have pronounced the one object to be two.” (Aristotle, 1951b, 460b). This is, however, less of an illusion than “primarily a disturbance of the body image” since in reality, “the unaccustomed position of the fingers makes the synthesis of their perceptions impossible” (Merleau-Ponty, 2005 [1945], p. 238). Studies have also demonstrated that this same “illusion” can be induced by uncrossing the two fingers (of an individual whose fingers are normally crossed). For further discussion see the experiments of Benedetti (1985, 1986, 1991)
ourselves (at the part of our body in contact with the object). But although there is a reciprocating touch, it is necessarily asymmetrical, and there is a clear felt distinction between the sensation of what is my (feeling) body and what is the other (felt) body. So to say I touch the wall is phenomenologically different from I am touched by the wall. A further distinction may therefore be made between active (touching) and passive (being touched) touch (J. J. Gibson, 1962).

Passive touch is experienced when we are the ones being touched – the “touchee” (R. Tallis, 2003, p. 143). This sensation is limited both in size – to the area of the object at the point of bodily contact – and in qualitative scope – to pressure, temperature, solidity, and texture (Hatwell, et al., 2003; Katz, 2013 [1925]). Furthermore, the accuracy of passive tactile perceptions are moderated by the sensitivity of the skin at the point where the touch takes place (roughly indicated by the number and type of receptors present), as well as whether or not we are consciously attending to it or expecting it (Ratcliffe, 2013), and whether we can see the part of the body being touched (Press, Taylor-Clarke, Kennett, & Haggard, 2004).

Active touch is an intentional exploratory touch. It is the touch we employ when we seek out the tangible properties of our world. This role is generally reserved therefore to the most dexterous and tactually discerning parts of our bodies, such as our hands, feet and lips (Field, 2003 [2001]; Montagu, 1978).

When, for instance, I touch a hot cup of coffee with my hands and fingers, I feel the solidity of the cup and the heat of the coffee, but – not unlike the blind man and his cane – I do so against the “tactual background” of my own hand (Merleau-Ponty, 2005 [1945], p. 316). If we shift the focus of our attention from the cup to the hand, then we are also able to perceive some sense of our own hand, its corporeal qualities, as well as other “sensings” (Husserl, 2000 [1952]) such as our proprioceptive awareness of where our hand is, what it is doing, and its prehensile movements (Bell, 1834, p. 116).

This is because the “phenomenology of touch is relational; the way in which we perceive something through our bodies is inextricable from how we experience our bodies.” (Ratcliffe, 2013, p. 140). The

237 During the act of cutaneous touch we have touch sensations “in” the hand and “on” the hand (Husserl, 2000 [1952]). see also Heidegger (2001 [1987], p. 83)

238 A note on terminology: ‘haptic’ touch is often, though not consistently used, as a synonym for active touch (see for instance: Hatwell, et al. (2003); Paterson (2007b); Jütte (2008); Ratcliffe (2013)). I have deliberately not used ‘haptic’ here as I find its inconsistency (both within the same discipline and across others) an impediment to the clarity of our discussion. Instead I reserve this term for use later in the chapter, in a manner that is more in keeping with its employment within the architectural discipline (Bloomer & Moore, 1977; Holl, 1996, 1999, 2003b; Pallasmaa, 2008 [1996], 2009, 2011a, 2012, 2012 [2005])

239 Gibson found that when an object was screened from view, subjects could correctly identify an object with 95% accuracy through active touch, but only 49% through passive touch (J. J. Gibson, 1962)


241 Studies have shown that tactual acuity is increased by being able to see the location of the touching (and conversely, acuity is reduced if touched somewhere out of sight) (Ballesteros & Heller, 2008)
solidity of the cup is felt as a resistance to my own relative solidity; similarly the perceived heat is a relative temperature to that of my hand. Thus, “in touch we directly appeal to the tactile properties of our own bodies in investigating the self-same tactile properties of other bodies” (O’Shaughnessy, 1989, p. 38).

Indeed, I cannot feel without also feeling my own corporeality, and so any tactual experience of the world is also an experience of being a part of that world. This is the basic principle of ontological thought,242 and the basis for our sense of what is real, as Ratcliffe explains:

 [...] without a sense of being part of a world, we could not perceive or think of things as residing in the same world as ourselves. Hence the sense of reality is not a matter of voyeuristic access to some external realm, from which the voyeur remains separate. Instead, it is phenomenologically inseparable from the sense of belonging.
(Ratcliffe, 2013, p. 136)

So to touch is not to be touched by the object, so much as it is to touch ourselves: I feel the cup (hand-cup) and I feel my hand (cup-hand). So it might be more accurate to say that “to touch is to touch oneself” (Merleau-Ponty, 1968e, p. 255).

In the case of self-touch, the issue is “again the same, only more complicated” (Husserl, 2000 [1952], p. 154). For we can never experience our own body as we experience an other’s body. Our body is not an abstract object or thing to us: “We do not ‘have’ a body in the way we carry a knife in a sheath. Neither is the body a natural body that merely accompanies us [...] rather, we ‘are’ bodily.” (Heidegger, 1979, pp. 98-99). If I describe my body, as a body, I can do so by listing its quantitative properties: it is such a height, weight, age, and so on. This is how we perceive the bodies of others and how we imagine others perceive our body, as “a corporeal thing” (Heidegger, 2001 [1987]) or a “spatio-thingly Object” (Husserl, 2000 [1952]).243

But when we touch our own bodies “we have then two sensations, and each is apprehendable or experienceable in a double way” (Husserl, 2000 [1952], p. 154). When touching my leg with my hand I have a double sensation in and on my hand (with my hand I perceive my touched leg and touching hand), as well as in and on my leg (with my leg I perceive my touching hand and touched leg). Thus, both hand (as toucher) and leg (touchee) act as the tactually perceiving subject and the tactually perceived object for the other: “the sensation is doubled in the two parts of the Body, since each is then precisely for the other an

242 That we, as Dasein, are “always already in the world. Being-in-the-world itself belongs to the determination of our own being” (Heidegger, 1988, p. 165)
243 As Nancy notes, “I’ll never know my body, never know myself as a body [...] By contrast, I’ll always know others as bodies. An other is a body because only a body is an other. It has this nose, that skin colour, this texture, that size, this fold, tightness. It weighs this weight. It smells that way [...]” (Nancy, 2008a, p. 31)
external thing that is touching and acting upon it, and each is at the same time Body” (Husserl, 2000 [1952], p. 153).

It is through the phenomenon of self-touching that we are able to experience our bodies as sites of both active and passive touch: “the two systems are applied upon one another, as the two halves of an orange.” (Merleau-Ponty, 1968a, p. 133). But while they belong to each other (and the orange as a whole) they remain distinct: when we touch ourselves we may be able to attend to the different parts of the body (as leg or hand) and recognise the double sensation that takes place in each, but here again there is a qualitative difference between the double sensation of the toucher (hand) and that of the touchee (leg). This is partly because our hands are far more tactually sensitive than our legs, but mostly it is because only the hand is tactually active – performing particular exploratory procedures on the passive leg.244

Even when the body parts involved are the same – such as when we move our hands over each other – only one may be exploratory; a felt-exchange takes place between active and passive, perceiver and perceived, a tactual “chiasm” (Merleau-Ponty, 1968a):

 [...] it is not a matter of two sensations felt together as one perceives two objects placed side by side, but of an ambiguous set-up in which both hands can alternate the roles of ‘touching’ and being ‘touched’.
(Merleau-Ponty, 2005 [1945], p. 106)

And although we can shift our focus between our right and left hand, one always remains tactually more salient than the other, since the moment of “coincidence” (the experience of the same hand being simultaneously felt as both active and passive) is never reached: just when we turn our attention from our touching right hand to our touched left, “coincidence eclipses at the moment of realisation” – the left becomes the toucher, the right becomes the object touched (Merleau-Ponty, 1968a, pp. 147-148):245 “the moment I feel my left hand with my right hand, I correspondingly cease touching my right hand with my left hand” (Merleau-Ponty, 1968c, p. 9).

Strictly speaking, we never feel that we are the recipient of passive touch when touching ourselves (as we do when other bodies touch us). The only exception, as Jean-Paul Sartre points out, is when we have lost feeling in the part of the body that is touched or touching (such as numbing from anaesthetics) (Sartre, 1992 [1943], p. 304). Only then are we able to feel our bodies as we do the corporeal bodies of others, but at the expense of an anaesthetised sense of belonging – the touched body part feels apart from us, and no longer a part of us. This is a feeling described well by neurologist Oliver Sacks, whose patient had awoken in

244 See Tallis description of asymmetrical self-touch (R. Tallis, 2003, pp. 203-204)
245 See also Ratcliffe (2008)
the night only to discover “a severed human leg” in the bed with him: “He felt the leg gingerly. It seemed perfectly formed, but ‘peculiar’ and cold” (Sacks, 1998 [1970], pp. 55-56). In shock and disgust the patient attempted to throw the leg out of bed, only to discover that his own body followed suit.

Sacks also describes his own experience of losing the sense of touch in his leg when he awoke in hospital after a mountaineering accident:

I touched nothing at all. The flesh beneath my fingers no longer seemed like flesh [...] The more I gazed at it, and handled it, the less it was there, the more it became Nothing – and Nowhere. Unalive, unreal, it was no part of me – no part of my body, or anything else. (Sacks, 1998 [1984], p. 52).

The body that does not touch (nor feel itself touched) does not belong to us. While it may remain physically attached to us, we have lost our attachment to it: it exists as any other corporeal thing. Hence, “it is never our objective body that we move, but our phenomenal body” (Merleau-Ponty, 2005 [1945], p. 121).246

Returning to the reciprocity of touch, the phenomenon of double sensation maintains that to touch is to touch ourselves. Hence, we cannot continue to claim that when we touch we are touched. For we cannot be touched by anything incapable of touching. On this, Heidegger is informative:

‘The table stands “by” [‘bei’] the door’ or ‘The chair “touches” [‘berührt’] the wall.’ Taken strictly, ‘touching’ is never what we are talking about in such cases, not because accurate re-examination will always eventually establish that there is a space between the chair and the wall, but because in principle the chair can never touch the wall, even if the space between them should be equal to zero. If the chair could touch the wall, this would presuppose that the wall is the sort of thing ‘for’ which a chair would be encounterable.247 An entity present-at-hand within the world can be touched by another entity only if by its very nature the latter entity has Being-in as its own kind of Being – only if, with its Being-there [Da-sein], something like the world is already revealed to it, so that from out of that world another entity can manifest itself in touching, and thus become accessible in its Being-present-at-hand. When two entities are present-at-hand within the world, and furthermore are worldless in themselves, they can never ‘touch’ each other (Heidegger, 2001 [1962], p. 81)

246 In German, the distinction between the felt objective body of another and our own feeling subjective body is made by the use of either “Körper” or “Leib”, respectively. See Heidegger (2001 [1987], p. 86); Husserl (2000 [1952], pp. xiv-xv); and Schmitz (1966).
247 “Voraussetzung dafür wäre, daß die Wand ‚für‘ den Stuhl begegnen könnte.” (Heidegger, 2001 [1962], p. 81, n.2)
The phenomenology of touch espoused here requires no small amount of unpacking, but already the relationship between our sense of touch, reality, and Being-in-the-world is beginning to emerge. If touching is predicated upon having a world, then we need first to understand what it is to be worldless.

To assist with this, Heidegger invites us to consider the following scene: we are walking down a path and we see a lizard basking on a stone in the sunshine. The stone is “laying on the path [...] It is ‘touching’ the earth.” (Heidegger, 1995 [1983], p. 196). The lizard is also laying on (touching) the stone. Heidegger points out, that although we use the same word – touching – to describe how each (lizard and stone) relate to their environments, the way in which they do so is quite different. And, moreover, the ‘touching’ that happens in each case “is fundamentally different” again from the way in which we touch. (Heidegger, 1995 [1983], p. 196).

Strictly speaking then, the stone is laying on the earth, only insofar as it exerts a certain pressure on the earth. But the stone remains unmoved: it is unable to experience this pressure, or the earth, or even understand the earth as earth. While it may presently be lying upon the path, if we were to pick it up and hurl it into the grass, it would lie upon the grass. Similarly if we threw it in the stream it would lie at the bottom of the stream. In any case, the various environmental conditions are never “given” to the stone: “everything present around it remains essentially inaccessible to the stone itself” (Heidegger, 1995 [1983], p. 196). Thus, for the stone and the earth (or any two “beings which are objectively present within the world and are, moreover, worldless in themselves”), “‘touching’ is never what we are talking about” (Heidegger, 2001 [1962], p. 81). This is not due to a lack of physical contact, but because neither stone nor earth is capable of encountering the other. Hence, “an entity present-at-hand within the world can be touched by another entity only if by its very nature the latter entity has Being-in as its own kind of Being” (Heidegger, 2001 [1962], p. 81).

The lizard, in contrast to the stone, has a world, or rather it has an awareness of itself and its relation to elements within its world, including the stone. This is not to say that it understands the stone as stone - as we understand the stone (in all its mineralogical significance and referential totality). Nor could it be said that it understands the sun that warms it as we understand it (in all its astrological importance and referential totality). Yet the lizard has “its own relation to the rock, to the sun, and to a host of other things” (Heidegger, 1995 [1983], p. 198). If we remove the lizard from the stone, it does not simply lie on the earth but seeks out the stone again: the stone is “given in some way for the lizard”, not as ‘stone’ (or ‘sun’) but as “lizard-things for the lizard” (Heidegger, 1995 [1983], p. 198).

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248 Things that are worldless have “no access to those beings (as beings) amongst which this particular being with its specific manner of being is” (Heidegger, 1995 [1983], p. 197). Put simply, the world (and everything in it – including lizards and ourselves) is utterly inaccessible to the stone.
From this analysis, Heidegger makes the following distinction that “The stone (material object) is worldless; the animal is poor in world; man is world-forming” (Heidegger, 1995 [1983], p. 184).

The lizard has access but it is comparatively limited – this is not to say that it is limited to the lizard, or that the lizard experiences a lack of world as such, but rather that its access is less than our access (as Dasein). Using a bee as an example, Heidegger describes how the bee has access (awareness, relational understanding and dealings) to its hive, other bees, and flowers. The world of the bee is limited, however, in both “range” and “penetrability” (compared to Dasein): it does not know the stamens [...] as stamens, it knows nothing about the roots of the plant, and it cannot know anything about the number of stamens or leaves” (Heidegger, 1995 [1983], p. 193).

But if only Dasein can touch because only Dasein is world-forming, what is it that makes us exceptional in this regard?

Neurologist, Frank Wilson, insists that it is our “handiness” that makes us “uniquely human,” along with “speech and tool use” (Wilson, 1999, p. 150). All three of these exceptional characteristics are predicated upon a sense of self (agency), a sense of other (reality/world), and of Being-in-the-world. Each of these is also fundamentally dependent upon a sense of touch and, as I now show, interdependent and mutually reinforcing.

In 1874 Charles Darwin suggested that tool-use, intelligence, and sagacity were the genetically prevalent traits of our successfully reproductive ancestors, and proclaimed that there is a “close relation between the size of the brain and the development of the intellectual faculties” (Darwin, 1874, p. 54). Inspired by his earlier studies of rabbits, Darwin maintained that an increase in intelligence caused an increase in brain size which prompted some fundamental anatomical adjustments needed to support this (Darwin, 1874, p. 55).

Contrary to the theory of cerebral evolution proffered by Darwin, the French anthropologist, André Leroi-Gourhan, proposed that it was a change in motility that advanced the species (Leroi-Gourhan, 1993 [1964], p. 47). Leroi-Gourhan explained that Darwin had confused cause and effect: although intelligence increases

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250 It is not simply a larger brain, however, that makes for greater intelligence, or even the ‘right sort’ (creative/innovative/abstract) of intelligence. Compared to humans, Gorillas have huge brains, yet their use of tools is found wanting. Capuchin monkeys, by contrast, have relatively tiny brains, but are capable of displaying an array of tool-use behaviours (Visalberghi, 1994 [1993]).

251 For Darwin, the plasticity of the human body allowed him to extrapolate evidence of particular environmental conditions under which it had developed: “Men who habitually live in canoes, may have their legs somewhat stunted; those who inhabit lofty regions may have their chests enlarged; and those who constantly use certain sense-organs may have the cavities in which they are lodged somewhat increased in size, and their features consequently a little modified.” (Darwin, 1874, p. 197)
with brain size, the brain can only grow within the spatial confines of the skull. Accordingly, any increase in brain size must first be afforded by an increase in skull size which in turn required a significant mechanical overhaul of the entire skeletal system: the structure of the foot, a modified pelvis that could support the entire trunk of the now vertical body, as well as the shape and strength of the spine that could facilitate the future augmentations of the skull (all of which are markedly different for quadrupeds and bipeds) (Leroi-Gourhan, 1993 [1964], pp. 61-74).

This argument follows two lines of thought: firstly, by advancing what has since become known as the **Savanna Hypothesis**252 (Lundborg, 2014), Leroi-Gourhan contends that with climate change came a change in habitat, and in turn posture (skeletal structure), motility, and sensory perception.253 Secondly, and in consequence to the above, the newly ‘liberated’ skull of the bipedal primate was now given greater freedom to undergo some major changes without recourse to the spinal limitations of his ancestors. The most significant being “the spreading of the cortical fan”(Leroi-Gourhan, 1993 [1964], pp. 74-83): the facial bloc begins to recede, and the prefrontal ridge disappears, allowing for expansion of the frontal lobe.254

With the liberated hand and skull, the human brain was thereby granted both the space and means for greater expansion and restructuring (Paillard, 1993).

From this, Leroi-Gourhan made the following connection between human handiness, speech and tool-use: “Bipedal posture and a free hand automatically imply a brain equipped for speech” (Leroi-Gourhan, 1993 [1964], p. 89) and “as soon as there are prehistoric tools, there is a possibility of a prehistoric language, for tools and language are neurologically linked and cannot be dissociated within the social structure of humankind” (Leroi-Gourhan, 1993 [1964], p. 114). Simply put, when the hands became liberated from the locomotive duties they were able to assume a number of roles previously performed by the mouth – carrying, tearing, gripping, and so on – often with greater dexterity and precision. This in turn left the mouth open for other duties, namely verbal communication.

Indeed, the interrelationship between hand and mouth is perceptible in everyday activities, and it is a common observation that people gesture when they speak. But, more tellingly, we also gesture when we know we cannot be seen – on the phone, in the dark, or in conversation with the blind (A. Clark, 2013; Goldin-Meadow, 2005). The frequency of these gestures has been found to increase when faced with a difficult task, a challenging idea, or simply having to make a decision (Goldin-Meadow, 2005, pp. 136-149).

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252 See Lundborg (2014, p. 23)
253 This has occurred three times: from arboreal brachiation in the forests, to quadrupedal locomotion on the planes, and thence the erect, bipedal gait that liberated the hands (and face)
254 The area of the brain responsible for decision making, planning, and problem solving, which also includes the primary motor cortex which regulates voluntary movements
This cannot simply be a learnt behaviour, as the congenitally blind also gesture when speaking (Iverson & Goldin-Meadow, 1998).

Studies in language and gesture have shown that any deliberate hand action requiring high levels of concentration (such as writing) tend to be accompanied by movements in the lips and tongue. They also found that spectators who are able to hear a speaker while also seeing their gestures are far more likely to successfully receive and comprehend the speaker’s message, and that people who speak while holding a large object open their mouths more widely than those holding only a small object. These findings are sufficient to support the view that there is “a significant overlap between the neural substratum for tool-use and that for language-use” (R. Tallis, 2003, p. 242).

One of the major consequences of the newly liberated hand was that its anatomical structure underwent some considerable remodelling, becoming not more, but less specialised. Brachiation favours the locomotive properties of the hand over its manipulative potential, ensuring that the architecture of the primate hand was perfected for those actions, and protected from any further deleterious mutations. Without the required restraints of brachiation, the human hand was able to shed these particular design perfections.

Adaptations in the early humanoid hands include a number of adjustments to the thumb (such as elongation and augmented muscles at its base), and a more independent long flexor muscle (improving strength and greater freedom of movement). In addition, there were also important changes to the bones in the wrist and metacarpal, as well as widened pads on the fingertips. A relative lack of specialisation generated a new found dexterity and manipulability which afforded more ways of getting to grips with the world.

This demonstrated by the act of prehension, as it is here that the first seeds of agency – the sense of what I am (and am not), what I am capable of making myself do, and that I am the one doing it – were sown. Prehension involves the successful analysis an object or situation (prior to apprehension), that enables us to respond appropriately. This requires us to recognise a) that we have a versatile and mobile toolkit at our disposal, and b) that we are able to assign the correct tool to the task. Generally speaking, these tasks may

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255 This is also the case when observing others holding objects of various sizes (Beattie & Shovelton, 1999, 2002; Goldin-Meadow, 2005; Meister et al., 2003; Rizzolatti & Sinigaglia, 2008)
256 For instance, the thumb of non-human primates remained short, so as not to interfere with the forming of the hook-grip, a crucial hand-form for arboreal life (R. Tallis, 2003, pp. 164-168)
257 Napier notes that “Without the thumb the hand is put back 60 million years in evolutionary terms”, affirming that “One cannot emphasise enough the importance of finger-thumb opposition for human emergence” from primitive man (Napier, 1993 [1980], p. 55)
involve either tactual exploration (actively feeling the tangible properties of something), or engaging with the object in order to perform an action (tool use).

Consider an object, like a coffee cup. If we wish to understand what it feels like, we simply reach out and touch it. But the species of tactual information we are able to discern from this action crucially depend upon how we touch. In the 1980’s, the psychologists, Susan Lederman and Roberta Klatzky, performed a series of studies on the way in which people tactually interact with objects and discovered that the particular choice of prehensile actions were (as with prehensile grips) chosen from a selection of common movements – each of which was selected based on the type of tactual information sought. These were called “exploratory procedures” (or EPs) (Klatzky, Lederman, & Reed, 1987; Lederman & Klatzky, 1987):

- Lateral motion (moving the skin laterally across a surface to feel texture)
- Pressure (pressing, pushing, bending, or twisting an object to feel its hardness of resistance)
- Static contact (resting the skin surface against the object without moving to detect relative temperature)
- Unsupported holding (the object is held in an unsupported hand to gauge the weight)
- Enclosure (fingers, often with palms, clasped around the surface of the object to feel global shape and volume)
- Contour following (mostly using the sensitive pads at the end of the fingers – with their papillary ridges – the object is explored along its surface to get a sense of the exact shape)

These findings have two immediate implications: firstly, that we have a degree of control over the type and quality of tactual information we obtain from the interaction. And secondly, that it is important that we select our EPs wisely. In fact most erroneous perceptions (tactual illusions), arise from an inappropriate selection or lack of experience with the chosen EP (Hatwell, et al., 2003).

Having identified the properties of the cup, the next thing we need to be able to do in order to use it is pick it up (grip it). Here again, the idea that we simply need to reach out and lift it belies the complexity of the task: to gauge correctly the physical shape of the object from visual cues; to recognise this image as an embodied image – to understand that shape (form, size, and scale) as a cutaneous measurement (how big or small it is relative to our hands); to form a grip that accurately accords to our impression of this shape; and to execute this with control, accuracy, and the right amount of force.259

259 Also known as “the sensorimotor transformation problem”, “the motion planning problem”, and “the inverse dynamics problem” (Wing, et al., 1996, pp. 147-150)
There are generally eight different grips that we use regularly in everyday life (Napier, 1993 [1980]):

- Hook grip
- Scissor Grip
- 5-Jaw chuck grip
- Pad-to-pad grip
- Pad-to-side grip
- Squeeze grip
- Disc grip
- Spherical grip

The selection is informed by the intended use, rather than simply what the object readily affords (Napier, 1993 [1980]; Wilson, 1999). The particular grip used is therefore not selected at random. Our repertoire of grips is sufficiently vast to afford a variety of different grips for different tasks, and yet not so vast that any grip will suffice (nor so limited that the act is either arbitrary, autonomous or reactionary).

It is our dexterous and skilled hands that make us “animals that choose” (Tallis, 1995): every prehensile act represents a decision regarding the nature of the task and the encounter we wish to have. This decision is always our decision.

It is from this awareness of choice that we have a sense of agency: the sense of ownership or control that we assume over our body, our thoughts, and our actions (R. Tallis, 2003, pp. 263-311). It was the hand that enabled us to understand it as a tool, and with it recognise our bodies as instruments and thence ourselves as agents: “from prehension to apprehension, and then to comprehension” (R. Tallis, 2003, p. 296).

But what of other animals that appear to have hands, other bipedal creatures or “graspers” that actively incorporate their forelimbs in tasks other than walking – rodents, primates, etc. (Leroi-Gourhan, 1993 [1964], p. 51). Do they not also have a sense of agency? If not the possession of hands, what is it that makes animals poor-in-world and us world-forming?

The hand is not a hand because it grasps – other animals, such as non-human primates, “have organs that can grasp, but they do not have hands.” (Heidegger, 1976, p. 16). “The hand”, continues Heidegger, “is infinitely different from all other grasping organs […] different by an abyss of essence” (Heidegger, 1976, p. 16).

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260 The hook grip uses the fingers to curl around an object (the handle of a bag for instance). The scissor grip involves holding something between the middle and index finger (such as a cigarette). The precision grips are used to hold an object between the pads of the fingers and thumb (such as changing a lightbulb or turning a key). And in power grips, the object is clasped between the fingers and the palm of the hand, leaving the thumb to act as a buttress (holding the handle of any object or throwing a ball) (Aiello & Dean, 2002; Hatwell, et al., 2003; L. A. Jones & Lederman, 2006)

261 Heidegger was quite correct to assert that “every motion of the hand in every one of its works carries itself through the element of thinking, every bearing of the hand bears itself in that element. All the work of the hand is rooted in thinking” (Heidegger, 1976, p. 16).

262 As Tallis points out, ‘assumption’ is used here in both senses: “as in a logical precondition; and as in something taken up, as for example the assumption of an office” (R. Tallis, 2003, p. 296)
The philosopher, Bernard Stiegler, posits that it is not our pentadactyl anatomy that makes our hands handy, but the way in which they are put to use (and the type of access to the world that this use affords) – “the hand is a hand only insofar as it allows access to art, to artifice, and to tekhnē” (Stiegler, 1998, p. 113). This accords with Heidegger, who maintains that one of the ways in which man is world-forming relates to artefacts.263

Artefacts are neither stone-like (worldless) nor animal-like (poor in world), but somewhere in-between. All artefacts are a product of manual activity, which is to say, they were created by Dasein for a purpose. Once created...

The work produced refers not only to the ‘towards-which’ of its usability and the ‘whereof’ of which it consists [...] it also has an assignment to the person who is to use it or wear it. The work is cut to his figure; he ‘is’ there along with it as the work emerges.264

(Heidegger, 2001 [1962], p. 100)

Such artefacts – like tools and architecture –“are worldless, yet as worldless belong to the world” as “a product [Erzeugnis] of human activity” (Heidegger, 1995 [1983], p. 213).265

A tool is an object “that extends the capacity of an agent to operate within a given environment” (Ingold, 2002, p. 315). But not all tools are artefacts. Many non-human animals also use tools for a variety of purposes, such as the extraction of a food source that would otherwise be unobtainable, or the creation of a complex nest or habitat.

The male weaverbird, as its name suggests, uses its beak to weave thin strips or fibres (torn from grasses or cattails) over and under one another at perpendicular angles to create its nest. It is an intricate and complex routine that is practised throughout the life of the bird. The ‘tool’ used in the case of the bird, is the beak – a physically and inconceivably inseparable part of the animal’s body – and as such, would equate to humans performing a task using their hands or teeth.266 Although certain actions performed this way may no doubt be skilful (see Ingold, 2002, pp. 349-361), it is an unconvincing argument to suggest they involve the use of tools.

263 Such as the manufacturing of “equipment, instruments and machines” (Heidegger, 1995 [1983], p. 213)
264 On the changing relationship of the user to the artefact – in terms of gestural signification and embodied semiotics, see Baudrillard (2005 [1968], pp. 49-66)
265 This, I maintain, is something that may be empathetically felt from the traces of making that are forged upon the surface of the object through production and use. It is in this way that a material is able to record the narrative history of the user-object relationship. This point is elaborated further in Chapter Four, Brand (2017) and Chapman (2005)
266 Though Sigaut suggests it is more dependent on the nature of the task: “If I use my teeth to eat with, no-one can consider my teeth as a tool. However, if I use them to work leather with, the question remains open to discussion” (Sigaut, as quoted in Berthelet & Chavaillon, 1993a, p. 405)
It could be said, however, that there are still ample examples of non-human tool-use where the animal in question appears to make the considered acquisition of an object (carefully selecting the right rock or branch, for instance) with the intention of using it in-order-to perform a particular function/purpose – such as the woodpecker finch (which uses cactus spines to poke out insects from cracks in trees), or chimpanzees (who use sticks for ‘termite-fishing’ in termite mounds).\textsuperscript{267} It could even be suggested that the coconut crab (\textit{Birgus latro}), uses coconut trees as equipment for breaking coconuts.  

Certainly, this type of tool use is not so different from the primitive tool use of humans: the first human “tools” were most likely eoliths (stones that had become carved to a point by wind or water). Like the tools employed by non-humans, eoliths are essentially found objects. At best they may be selected and manipulated to perform better their intended role. These tools are therefore known as \textit{naturefacts}, not \textit{artefacts}.

The evolution of human tools, while not expedient, is a more eventful story: the first tools to be made by humans were pebble-choppers (2.5 million years ago), which would only be superseded by hand-axes after another million years, and it would be another million years again until the flake-making industry emerged. It is only with flake-making that “tool-making was fully liberated from tool-using” (R. Tallis, 2003, p. 228).

The flake – the first truly manufactured\textsuperscript{268} tool devised by \textit{Homo habilis}\textsuperscript{269} – represents a number of creative and intellectual advances from tool-modification: it requires an initial idea of what the product should do (the need it should meet), what material it requires to perform that task, and what shape it should be. Even the form needs be understood as requiring a hand-end and a work-end that are necessarily different from one another. This idea and foresight must be maintained over the course of the hours required patiently to chip small flakes from a larger stone with a stone ‘hammer’. This is a particularly advanced form of embodied intelligence inaccessible to animals.

The real difference between human and non-human tool-use then, is the difference between the act of tool-making and that of tool-modification: “of a tool made explicitly to be a tool and a tool conceptually liberated from the material world of interaction in which it is embedded” (R. Tallis, 2003, pp. 227-228).\textsuperscript{270}

\textsuperscript{268} Incidentally, the word \textit{manufacture} comes from \textit{manus} (‘hand’), and \textit{facere} (‘to make’). Literally: made-by-hand
\textsuperscript{269} 500,000 years before the emergence of \textit{homo erectus} (and their larger brains), further supporting the notion that tool-use drove mental development, not the other way around (Lundborg, 2014)
\textsuperscript{270} Napier articulates the distinctions thusly:
“Tool-using is an act of improvisation in which a naturally occurring object is utilized for an immediate purpose, and disregarded.
Tool-modifying consists of adapting a naturally occurring object by simple means to improve its performance: once used it may be disregarded or retained.
Tool-making is an activity by which a naturally occurring object is transformed in a set and regular manner into an appropriate tool for a definite purpose.” (Napier, 1993 [1980])
is within this “secondary tool use” (Kitahara-Frisch 1993) – the use of tools to make tools – that “the uniqueness of human beings [...] lie” (R. Tallis, 2003, p. 227):

    tool-using in humans – unlike that in animals – is an offshoot of a different, unprecedented kind of bodily self-awareness – in particular the sense of one’s body as an instrument (and of oneself as an agent) – derived not simply from the unique dexterity of the human hand, but from the means by which that dexterity is achieved. (R. Tallis, 2003, p. 272)

An awareness of the body, as my body, provides me with a unique sense of instrumentality, such that my hands may well be perceived as “the tool of tools” (Aristotle, 1907, 432a).

Figure 22 - Flint Hand Axe (ca. 4500-4000B.C.)
Source: MET (http://www.metmuseum.org/art/collection/search/573795)
A felt reciprocity

In this chapter I have explored the reasons why touch has been forgotten; the most pernicious are:

- The rise in the perceived importance of vision, visuality and visual technologies
- The limitations of language and our inability to adequately articulate our phenomenological architectural experiences
- An inherited cultural denigration of touch (and contrariwise the “nobility of sight”)
- A lack of explicit importance (and conversely, an implicit lack of importance)
- Uncertainty or ambiguity as to what we actually mean by touch (what is the sense of touch/what does touch sense? What is the organ of touch? What are the limitations of touch? etc.)

The first point suggests that the rise of visualism is inversely proportional to the importance of touch (Paterson, 2007b). It is certainly true that the increase in visual technologies over the last century (Crary, 1992, 2001 [1999]), as well as visual media over the last decade in particular, have done little to redistribute this sensory imbalance, removing us further from our environment and ourselves (Bloomer & Moore, 1977).

What is less certain, however, is that a visual-bias alone is sufficient to produce retinal architecture. As cultural historian, Constance Classen, reminds us, “there can be no straightforward narrative of a decline in the cultural importance of touch accompanied by a corresponding rise in the cultural importance of sight. The sensory patterns of history are too complex.” (Classen, 2012, p. 159). We should therefore be cautious not to confuse correlation with causation.

The second point reappears across the literature on touch, and concerns the “linguistic shortfall” of the “Anglo-American sensory lexicon” (Paterson, 2007b, p. 14). This is the observation that, when asked about their tactual experience of an object, people seem particularly inarticulate (Sonneveld & Schifferstein, 2008). To assist with this, I have addressed some of the issues surrounding the ambiguity of touch (point five): I have shown how touch can be considered as a single unitary sense composed from a heterogeneous sub-systems that are bound together in the phenomenal experience of touching. An elusive sense, touch has no single sense organ, no ‘minimal’ or base characteristics that it must include in order to be recognised as touch. Touch is also not simply a proximal sense, with clear or even static boarders, but one that is

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271 (Hale, 2012a; Paterson, 2011; Picon, 2012)
273 This may, in part, be due to the fact that most tactual experiences go unnoticed (see point four)
274 Except difference, a felt distinction between self and other.
constantly ‘dilating’ and dynamically refining and redefining our sensorium through use and experience (habit).

While the translation of direct embodied phenomena to written text will always be a limiting condition,\(^{275}\) this is precisely the task of phenomenology: “to unbury and describe this given-ness, of which people usually lose sight because of the mundaneness and taken-for-grantedness of their everyday life-situation” (Seamon, 1980, p. 149).

What we feel when we touch/ are touched, may be influenced by our understanding of the sociocultural context (what is/is not appropriate), the perceived value (historic, personal/sentimental, monetary etc.), our expectations and mood (attunement). Touch is not simply therefore a matter of sensory perception, but includes a whole embodied world of signification (which includes knowing which sensations to ignore).

It is for this reason that I have explored the qualitative significance of what it means to touch and be touched. Central to this was Pallasmaa’s assertion that “architecture articulates the experiences of being-in-the-world and strengthens our sense of reality and self” (Pallasmaa, 2008 [1996], p. 11).

I have thus elucidated how our sense of touch is central to our experience of architecture, and of having a world, since it is our tactual perception on the basis of which we are afforded a sense of agency, reality and Being-in-the-world.

A sensory anthropology of touch to demonstrate how our tactual perception, like that of vision, “is an artefact, produced by means of other artefacts” (Wartofsky, 1987, p. 307), one subjected to many influences over time (Howes, 1991, 2005d). Understood thusly, people from different times and different cultures inhabited quite different sensory worlds (Classen, 1993; Hall, 1990 [1966]). In other words...

> […] different use of the senses leads to very different needs regarding space no matter on what level one cares to consider it. Everything from an office to a town or city will reflect the sense modalities of its builders and occupants […] It is [therefore] essential to know how the populations involved perceive space and how they use their senses.

(Hall, 1990 [1966], p. 148)

What is important to note here is that our sensory perception is a culturally inherited act, rather than an autonomous or physiological process, and the perceived importance of touch has clearly “revolved, as well as evolved” (Howes & Lalonde, 1991). Although we may presently live in an ocularcentric society, by “readdressing the tactile range of human perceptions” (Frampton, 1985, p. 29) we may yet influence a further shift in the sensory revolution, towards a more-than visual or haptic architecture.

\(^{275}\) See Introduction
Indeed, Pallasmaa maintains that it is precisely this desire for haptic architecture that our current ocularcentrism incites (Pallasmaa, 2012 [2000], p. 322; 2012 [2010]-b, p. 249). It is important therefore to understand what is meant by the term haptic, how it relates to our tactual phenomenology discussed thus far, and of what a haptic architectural experience should consist?

Originally conceived within the field of psychology to refer to “the doctrine of touch” (Dessior, 1892), the term haptic has been adopted by a diverse range of disciplines, each concerned with a particular aspect of touch.276 Within the field of psychology, use of the term ‘haptic’ has remained relatively consistent – as a synonym for active or exploratory touch.277 Outside of psychology (or digital interfaces), however, ‘haptic’ is employed far more liberally, often with reference to vision – either as a polarising term, or as a conjoint for affective images – as a means of elucidating a phenomenology of moving images and touching sights (V. Sobchack, 2004).278 From Riegl (1985 [1901]) to Rodaway (2011 [1994]), Deleuze (2011 [1981]; 2005 [1980]) to Diaconu (2005, 2006, 2011a, 2011b), ‘haptic’ now enjoys international and interdisciplinary usage in describing the way in which our perceptions are felt by, with, and through our bodies.279

The notion of hapticity was perhaps first introduced into the architectural discourse by Kent Bloomer and Charles Moore. In their seminal text, Mind, Body, and Architecture, the haptic sense is described as “the sense of touch reconsidered to include the entire body”, which comprises “all those sensations (pressure, warmth, cold, pain, and kinesthetics) which previously divided up the sense of touch, and thus it includes all those aspects of sensual detection” (Bloomer & Moore, 1977, p. 34).280 The result was “a new basis for understanding human feelings as three-dimensional architectural experiences” that “had serious implications for the theorization of place in architecture” (Otero-Pailos, 2002, p. 183), insofar as it provoked a resurgence of humanist architectural writers and educators with an interest in phenomenology and the feeling body (Leib).281

Today, however, the term that was originally introduced to combat the limitations of language and aid our articulation of the phenomenology of touch has itself become so broad and diverse in its application that it has since fallen prey to many of the same hazards that led to a forgetting of touch. Is it any wonder that our memory of hapticity has fared no better?

277 (Grunwald, 2008; Hatwell, et al., 2003; Klatzky, et al., 1987; Lederman & Klatzky, 1987)
278 Which I discuss in terms of a haptic-visuality. See Chapter Three
279 Tallis explains that his reasons for using “this somewhat obscure word [haptic] [...] is that it is the only exact correspondent I can find to ‘visual’ and because it sounds so lovely.” (R. Tallis, 2003, p. 42, n.10)
280 A far cry, perhaps, from the seemingly ocular bias of Moore’s doctoral thesis, where he claimed that “Architecture is, in its broadest sense, man’s conscious ordering of his visual environment.” (C. W. Moore, 1957, p. V)
281 This included what Otero-Pailos refers to as “the old guard”: Christian Norberg-Schulz, Kenneth Frampton, Alberto Pérez-Gómez, and Dalibor Vesely (Otero-Pailos, 2010, p. 257)
This is evident on three fronts. Firstly, in the general absence of the haptic within contemporary architectural discourse.\(^{282}\) Secondly, of the results that are returned when one searches for “haptic architecture”, the vast majority will have used ‘haptic’ as a synonym for ‘touch’ (Fig.23), usually within a list of the sensory experiences that the particular building or space is said to elicit.\(^{283}\) Thirdly, between the diffuse and generalised use of ‘haptic’, and a lack of resources to draw upon, the few writers that do discuss hapticity and architecture (Pallasmaa, Holl, Bloomer and Moore) become quoted and requoted \textit{ad infinitum}, drawing any discussion of a haptic phenomenology back into an incestuous cycle of the same quotable quotations without advancing the conversation.

Architects whose works are proffered as those that bring the awareness of hapticity to the forefront of the architectural experience (heightening the sense of materiality, intimacy, and nearness) include: Alvar Aalto, Tadao Ando, Álvaro Siza, Luis Barragán, Carlo Scarpa, Kengo Kuma, Herman Hertzberger, Antoni Gaudi, Glen Murcutt, Frank Lloyd Wright, Louis Kahn, Herzog & de Meuron, Peter Zumthor, Sigurd Lewerentz, Tod Williams + Billie Tsien.\(^{284}\) I would also add to this list Studio Mumbai, Edward Cullinan, Herb Greene, Thomas Heatherwick, Diller Scofidio + Renfro, Decosterd & Rahm, Rafael Moneo, Sverre Fehn, Gottfried Böhm, Jørn Utzon and Caruso St John.

Although this may, at first glance, appear as a rather formidable and disparate all-star team of architects plucked from the last hundred years, I maintain that each has produced architecture that privileged the haptic experience.\(^{285}\) And while some of the more popular architects may be fairly predictable sources when it comes to discussing architecture in relation to phenomenology, embodiment, and sensory perception, it would be a mistake to dismiss them as peddling “an unreconstructed humanism” (Paterson, 2011, p. 267).\(^{286}\) Rather, it reinforces the notion that there “are far too many buildings that possess [far too] little in terms of the haptic realm of experience and the poetic detail” (Holl, 2006). Predictability of

\(^{282}\) A search for “haptic architecture” will return very few results, before simply returning articles that include the words “architecture” and “haptic” somewhere in their contents. The fifth result of a Google Scholar search for “haptic architecture” retuned a paper entitled, \textit{Semiautonomous haptic teleoperation control architecture of multiple unmanned aerial vehicles}.

\(^{283}\) Example sentences include:

“…by fusing floor and wall, floor and screen, surface and interface, a plastic, liquid, and haptic architecture is achieved” (Cuito, 2000, p. 25)

“…architecture that serves people’s well-being, from haptic experiences and tactile qualities right down to the climate of a particular room” (Dorth & Honold, 1999).

“The haptic and visual aspects of materials clearly dominate discussions of materiality…” (Fernandez, 2006, p. 10)

The word “haptic” does not reappear again in any of the above publications, nor is there any attempt to explain what it is or why it needs to be used instead of the word, “touch”


\(^{285}\) See Chapter Five

\(^{286}\) See also Massumi (2002); and Otero-Pailos (2010)
sources in this instance infers little more than the fact that there are still too few thinkers and architects writing on this topic.

Pallasmaa is perhaps the most ardent and prolific architectural writer to promote the potential of hapticity. Unlike vision, “the haptic sensibility savors plasticity, materiality, tactility, and intimacy. It offers nearness and affection rather than distance and control.” (Pallasmaa, 2012 [1998], p. 194). According to Pallasmaa, “architecture is fundamentally a haptic art-form” (Pallasmaa, 2012 [2000], p. 205), that provides us with our “sense of being in the world, and in a specific place and moment, the actuality of existence.” (Böhme, 2013c, p. 99). Accordingly, a “haptic city” is one that “evokes our sense of empathy and engages our emotions” and imbues a palpable atmosphere (Pallasmaa, 2012 [1996]).

Likewise, Holl has a subchapter in *Intertwining*, called “*Materiality and the Haptic Realm*” where he claims that

...no other realm more directly engages multiple phenomena and sensory experience than the haptic realm. The haptic realm of architecture is defined by the sense of touch. When the materiality of the details forming an architectural space become evident, the haptic realm opens up (Holl, 1996)

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This is the sum total of what Holl has to say about hapticity and architecture: it relates to touch, the senses, and materials.\textsuperscript{288} This is not a criticism of Holl’s work, nor should it indicate in any way that his architecture does not open up the haptic realm. Indeed, Holl is one of the most cited exemplars of haptic architecture practising today.\textsuperscript{289}

These examples simply serve to illustrate that the haptic is a difficult subject to elucidate and, furthermore, that elucidation is not a prerequisite for the creation haptic architecture.\textsuperscript{289} While neither of these architectural thinkers appear to offer a clear or comprehensive description of hapticity,\textsuperscript{291} they remain two of the primary references for any discussion of haptic architecture, and raise a number of important and interesting points about what a felt-phenomenology might entail.

Like Pallasmaa, Paterson has similarly observed a visual bias in architecture, and has called for a re-examination of “the experience of built spaces from an always-embodied, more-than visual perspective”. This is “one that attends to a range of sensory-somatic and affective experiences that include, but crucially are not limited to, the visual.” (Paterson, 2011, p. 264). This would seem to align nicely with Mallgrave’s definition of hapticity, “as a synonym for the emotive and multisensory experience of architecture, which includes the visual dimension” (Mallgrave, 2011, p. 189). I think this explanation of haptic perception – as a more-than visual means of experiencing architecture – is therefore a strong starting point from which to articulate a more substantial definition of a felt-phenomenology.

In point of fact, it is my contention that our haptic perception includes all the senses, since our perceptions are necessarily embodied, and the impressions we form of a room, a building, or a city, are felt as a single immiscible force, or unitary phenomenon (Merleau-Ponty, 2005 [1945]). This then, is the first tenet of a felt-phenomenology: that our felt-perception of the world is not only multisensory, but fundamentally cross-modal (synaesthetic) as well.\textsuperscript{292}

The second tenet of a felt-phenomenology of architecture recognises the reciprocity of touching encounters (R. Tallis, 2003, p. 31), and the fallacy of dualist conceptions of perception (such as mind/body, or body/place) (Schmitz, et al., 2011). Critically, this is not to equate the active touch of our feeling body

\textsuperscript{288} See also Holl (1991, p. 10; 1999, p. 64); Holl and Futagawa (1993, p. 60)
\textsuperscript{289} (Bruno, 2002; Hartoonian, 2006a; Mallgrave, 2011; Malnar & Vodvarka, 2004; Pallasmaa, 2008 [1996]; Shirazi, 2014; Temple, 2007)
\textsuperscript{290} Just as riding a bicycle does not require prior knowledge of physics – it is an experience that is judged by feeling. Or in the case of architecture, by the atmosphere (that is felt). See Chapter Four
\textsuperscript{291} Pallasmaa has been criticised for “his unsophisticated opposition between optical detachment and haptic engagement [resulting in] a historical generalisation that bears little scrutiny” (Paterson, 2007b, p. 99). Parisi similarly condemns Pallasmaa for “deploy[ing] the haptic uncritically and ahistorically” in order “to be mobilized in service of anti-modern and anti-ocular arguments about aesthetic” (Parisi, 2008, p. 93)
\textsuperscript{292} See Frampton (1981; 1985, p. 28); Mallgrave (2011, p. 203). On synaesthetic perception, see Chapter Three as well as Frascari (2003) and Böhme (2013e)
(Leib) with the passive touch of the body we are touching (the corporeal body of an other). But rather, to understand that what we feel in, with, and through our bodies is a response to what we perceive within our sensorium. This is not limited to touching in the narrow sense of making physical contact, but includes all the ways in which we are touched, moved, or affected by our surroundings. Thus, the landscape phenomenologist, Christopher Tilley, explains how his perception and embodied awareness is affected by other bodies (like stones or lizards) in a way that it would otherwise not be if they were not there (Tilley, 2004, 17). This affective touching is a tactual dimension that is no less forceful in leaving an impression upon us than any physical touching. A more inclusive formulation may therefore be:

“To touch is [...] to touch and be touched in the multiple sense of being affected” (R. Tallis, 2003, p. 31).

These are the principles of a felt-phenomenology that will be developed and discussed over the next two chapters.

293 This is not, however, sufficient basis from which to argue that “To perceive things [...] is simultaneously to be perceived by them” (Ingold, 2010a, p. 247)
294 This largely involves the way we are gripped by emotions and atmospheres. See also Böhme (2013c) and Pérez-Gómez (2016)
Chapter Three: Haptic-visuality and (syn)aesthetic perception

Figure 24 – “The Seven Lively Arts: Art of the Cinema” (1944), Dali, Salvador
Source: Smithsonian
(http://collections.si.edu/search/tag/tagDoc.htm?recordID=siris_jul_55007)
[The artist] touches, he feels, he reckons weight, he measures space, he molds the fluidity of atmosphere to prefigure form in it, he caresses the skin of all things. With the language of Touch he composes the language of Sight – a ‘warm’ tone, a ‘cool’ tone, a ‘heavy’ tone, a ‘hard’ line, a ‘soft’ line.

- Henri Focillon, *The Life of Forms in Art*
The pentomic model of the senses – that venerates vision and denigrates touch – has persisted in western culture since Aristotle. This thesis has been so successfully sustained that even today it is generally accepted that we have five separate senses, each transferring disparate sense data from the world to the mind. Such basic misconceptions of the perceptual process continue to overshadow the rich interrelationship between the various senses and the importance of the motive, feeling body that unites them. The purpose of this chapter is therefore to illustrate the fallacy of these ideas and establish the first tenet of my felt-phenomenology: that our felt-perception of the world is fundamentally cross-modal or synaesthetic. I do this by illustrating the fact that our visual perception is not only optical, and elucidating the ways in which we feel what we see.

I begin by introducing the idea of haptic-visuality, a term now commonly employed within media studies to describe the phenomenal viewing experience of the embodied spectator. I show how this concept developed from early twentieth-century theories of perception by art-historians, principally Alois Riegl, Heinrich Wölfflin, and Bernard Berenson.

I propose a more synaesthetic model of perception that aligns with Merleau-Ponty’s conception of the body as a “synergic totality” that translates every sensation “into the language of the rest” (Merleau-Ponty, 2005 [1945], p. 369). This thesis of sensory blending has recently been confirmed by neurological studies and is already accepted as common practice within marketing psychology.295

While these ideas are promising, their potential is yet to be fully realised in architecture. This is most apparent in the creation of a particular type of architectural imagery: the promotional image. These remain predominantly optical, focusing on the photogenic experience that it offers the spectator. This section concludes by addressing the short-comings of this attitude. I argue that by realising the potential of our synaesthetic faculties, haptic-images offer a more touching alternative to optical imitations: one that is more aesthetically analogous to the how the architecture feels.

295 See Chapter One
Most tactile sensations reach us indirectly, through our eyes. Our physical environment feels ineluctably tactile even though we touch only a small part of it. Reddish fluffy surfaces are warm, light-blue glittering ones cool. A glass coffee table next to a polished walnut chest is a tactile composition. A street lined by brownstone houses and graceful trees makes a charming picture, but the charm comes as much through our sense of touch as through our eyes. Seeing and the tactile sensation are so closely wed that even when we are looking at a painting it is not clear that we are attending solely to its visual qualities. (Tuan, 1993, p. 43)

In the above passage, the geographer Yi-Fu Tuan describes just some of the ways that we are touched by what we see. But he also identifies a problem: that these tactual sensations are so seamlessly interwoven with vision as to go unnoticed or, at least, unappreciated in day to day experience. This sentiment has been echoed more recently by Pallasmaa, when we says that:

We are not usually aware that an unconscious element of touch is unavoidably concealed in vision; as we look, the eye touches, and before we even see an object we have already touched it [...] Touch is the unconsciousness of vision, and this hidden tactile experience determines the sensuous quality of the perceived object, and mediates messages of invitation or rejection, courtesy or hostility. (Pallasmaa, 2012 [2000], p. 323)

These descriptions of visual perception suggest a kind of tactual-visual synergy or sensory binding. This is a haptic form of visual perception that could be better understood as something like “touching at distance”, as Frascari explains: “[this] haptic vision is a form of tactile vision; here the eye is used as an organ of touch” (Frascari, 2011, pp. 134-135). But what does Frascari mean here by “haptic” or “tactile” vision? Indeed, how can vision be considered tactile? How can we feel what we see?

While “haptic vision” may sound oxymoronic in the traditional amodal view of the (five) sense modalities (each activated by a separate sensory stimuli), recent research into visual perception and hapticity suggests that this idea is not as esoteric as one might expect. In the burgeoning fields of media studies, for instance, scholarship is starting to look beyond the visual and returning to the phenomenal body. These authors are united by the notion that images – although undoubtedly created to be seen – may also be felt

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296 As Johann Wolfgang Goethe put it, we want to “see with an eye that feels, [and] feel with a hand that sees.” (Goethe, 2015, p. 12, vii). For a variation see Pallasmaa (2009, pp. 101-102)

297 “Haptic” is also the preferred term for Deleuze, who argues that it is “a better word than ‘tactile’ since it does not establish an opposition between the two sense organs but rather invites the assumption that the eye itself may fulfil this tactile function” (Deleuze & Guattari, 2005 [1980], p. 492).

in numerous ways. The concept of a haptic visuality as a “nonoptical” mode of vision, is suggestive of how we may indeed feel what we see, and warrants further investigation.

Following the phenomenological account of the “embodied spectator” presented by Vivian Sobchack (2004; 1992), fellow media theorist, Laura Marks, describes the cinematic experience in tactual terms in an attempt to “re-embody criticism” of the visual encounter (Marks, 2002, p. xvii). Marks further elucidates this more-than visual sensation by differentiating between haptic visuality and optical visuality: the latter “depends on a separation between the viewing subject and the object,” in which the spectator has “the ability to stand coolly back” and behold the scene presented (Marks, 2000, pp. 162, 188). Haptic visuality, by contrast, collapses the distance between bodies, allowing “the eyes themselves to function like organs of touch” (Marks, 2002, p. 2). This is a more multisensory mode of seeing, “draw[ing] from other forms of sense experience, primary touch and kinaesthetics” (Marks, 2002, p. 2).

Haptic images therefore are those that afford a haptic mode of visual engagement: images that arrest the beholders gaze by affixing it to the “the skin of the film” (Marks, 2000), emphasising surface textures with “a caressing touch rather than a penetrating gaze” (Jennifer M. Barker, 2009, p. 24). Haptic images are employed in film predominantly through different effects created by and on the medium itself: “rough scratches, tickling fur and dust speckles, dappled light and colour, smooth dissolves and fluttery, quick cutting” (Jennifer M. Barker, 2009, p. 24), as well as “changes in focal length, graininess [...] and effects of under- and overexposure.” (Marks, 2002, p. 9). The intended consequence is “a labile, plastic sort of look, more inclined to move than to focus.” (Marks, 2002, p. 8). Haptic images in this instance, “refuse visual plenitude” by preventing easy or effortless consumption of what is seen (Marks, 2000, p. 177).

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299 These include for instance (in the case of celluloid film or printed images) a physical entity that may be directly handled and touched, but they are also a means of ‘staying in touch’ with loved ones located elsewhere (R. Williams, 2003). Photographs are capable of keeping the memory (and image) “within our grasp” (Olin, 2012, p. 2). This is particularly true of images of the deceased, which form what Benjamin referred to as “the cult of remembrance,” where “the aura emanates [...] in the fleeting expression of the human face.” (W. Benjamin, 2007, p. 226).

300 An immersive type of vision, where “space is not visual, or rather the eye itself has a haptic, nonoptical function” (Deleuze & Guattari, 2005 [1980], p. 494).

301 Including “haptic perception”, “haptic visuality” and “haptic images”

302 Sobchack was not the first to suggest an embodied phenomenology of spectatorship however; this notion had emerged over six decades earlier in the writings of Dorothy Richardson (Garrington, 2013). See Richardson (1998 [1927])

303 Despite the distinction between haptic- and optic-vision, Marks is keen to stress the importance of both in everyday experience, and the ease with which we slide between them (depending on what it is that the viewer is looking at and what they’re looking for).
In addition to this tactile form of haptic perception (emphasising texture and materiality), the film theorist, Noël Burch, identifies another tactual dimension of haptic visuality that focuses not on the object but on the spaces *between* objects and the proprioceptive potential that the space affords. Burch observes how, in early cinema (1906-1915), visual space was represented in one of two ways: as a weak illusion of habitable space (creating a “visual flatness” – through effects such as *trompe-l’œil*), or as a sense of depth generated by the idea of potential movement, and spatial occupation. The latter, he referred to as “haptic space” (Burch, 1990).304

One figure that recurs throughout the scholarship on haptic visuality is Benjamin and his observations on how these new visual technologies – photography and film – were impacting upon the modern viewer. Benjamin explains how the precursor of the cinematic experience was the art of Dadaism, which created sensory “missile[s]” from chaotic and violent juxtapositions, capable of striking the viewer forcefully with a “tactile [*taktisch*] quality” (W. Benjamin, 2002 [1936]-b, p. 119). Cinema inherited these tactile tactics, and revised, reformatted, and reproduced them as “*physical shock effect*[s]”, such as “successive changes of

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304 Burch speaks of “the tangible proof of the three dimensionality of ‘haptic’ space” with regards to film and the capacity to perceive spatially. Early film (pre 1906) is often criticised for its optical reliance on linear perspective or for exhibiting one or more cues of flatness: “(1) a more or less vertical illumination suffusing the whole field in front of the lens with a completely even light; (2) the fixity of the camera; (3) its horizontal and frontal placement; (4) the very widespread use of painted backdrops; (5) lastly, the placing of the actors, always a long way from the camera, often spread out in a *tableau vivant*, all facing front, and without axial movement of any kind.” (Burch, 1990, p. 164)
scene and focus” intended to inflict “a percussive effect on the spectator.” (W. Benjamin, 2002 [1936]-b, p. 119).

As regards architecture, Benjamin explains that we perceive our surroundings through “use and perception,” twin modes of embodied sensory perception which he terms “tactile” and “optical,” respectively (W. Benjamin, 2002 [1936]-b). The former is understood as an ongoing process of habituation (and habitation) of a place with and through the (felt and feeling) body in action. The latter is visual and predicated on how we see (through our extraocular, head, neck and body movements), which is determined by how we use our bodies in space (our habits).

Habit here refers to our natural attitude – how we experience our bodies and our built environment in its average everydayness (as part of our life-world), as an ongoing process that remains, for the most part, inconspicuous and unremarkable. Benjamin observes, for instance, that while “we are familiar with the movement of picking up a cigarette lighter or a spoon, [we] know almost nothing of what really goes on between hand and metal, and still less how this varies with different moods” (W. Benjamin, 2002 [1936]-b, p. 117).

Curiously, this sensation of being visually bombarded is consistent with reports from the congenitally blind in the period following successful cataract operations: “When I first looked it was like an electric shock, really, as if something had hit me.” (Hocken, 1976, p. 730).

David Seamon describes something very similar when he discusses how our “natural attitude” (Heidegger, 2001 [1962]) is evinced in the way that we perform our particular and personalised “body-routines” (Seamon, 2007, 2015). See Chapter One

See also Gadamer (2004 [1975], pp. 148-151)

For a discussion on how our mood or attunement affects our perceptual faculties, see Chapter Four
By confronting the “optical unconscious”, and exposing the “secret [...] physiognomic aspects of visual worlds” hidden therein (W. Benjamin, 1999 [1931]-a, pp. 510-512), visual technologies have made our embodied actions unavoidably conspicuous. Our vision thus becomes focused upon a kind of corporeal awareness – what anthropologist, Michael Taussig calls a “tactile knowing of embodied knowledge” (1993, p. 31).

According to Taussig, our mimetic faculty involves our bodies in the act of seeing such that the “visceral quality of the percept unite[s] viewer with the viewed.” (Taussig, 1993, p. 24). Following Taussig’s description, Barker stresses that when we speak of the being moved or touched, or of the visceral quality of aesthetic perception, it is not meant metaphorically but expresses a means by which the eye becomes an “organ of tactility” (Taussig, 1993, p. 20):

haptically, at the tender surface of the body; kinaesthetically and musculearly, in the middle dimension of muscles, tendons, and bones that reach toward and through cinematic space; and viscerally, in the murky recesses of the body, where heart, lungs, pulsing fluids, and firing synapses receive, respond to, and reenact the rhythms of cinema” (Jennifer M. Barker, 2009, p. 3; 2011, p. 151).

While Benjamin has been described as “modernism’s best-known interrogator of the haptic” (Garrington, 2013, p. 19), his thoughts on haptic visuality, as well as those regarding aesthetic perception, can be traced to the work of the Austrian art historian, Alois Riegl. Indeed, it was through Riegl’s notion of the Kunstkollen – artistic will or urge (Iversen, 1993) – that first suggested a sensory historiography of aesthetics, shifting the emphasis from the artist-artefact relationship to that of the artefact-viewer.

This concept clearly resonated with Benjamin who credits Riegl (along with Franz Wickhoff) as being the first to conceive that “just as the entire mode of existence of human collectives change over long historical periods, so too does their mode of perception” (W. Benjamin, 2002 [1936]-b, p. 104).
The implications of this thesis were threefold. Firstly, each artistic period is predicated on the previous one, and could not be arrived at without it (thereby rendering each period of equal importance and significance) (Riegl, 1982 [1903]). Secondly, since each artefact is a “pleasurable visualisation of things” as seen through the eyes of the artist’s particular Kunstwollen, anything we see that evokes “disharmony” in us, serves only to illustrate the difference between the Kunstwollen of its production and that of our reception (Riegl, 1985 [1901], p. 231, p. 9). And thirdly, the beholder acknowledges responsibility for how s/he perceives by recognising him/herself as an “active-being” that will interpret the world “in accordance with his inner drive (which may change with nation, location, and time)” (Riegl, 1985 [1901], p. 231).

Riegl posited that each Kunstwollen could be defined by one of three modes of aesthetic perception (Gubser, 2005). These perceptual states were haptic (haptisch), haptic-optic (haptisch-optisch), and optic (optisch), and are most clearly expressed through the architecture of the ancient Egyptians, the Greeks, and the Late Romans, respectively (Riegl, 1985 [1901], p. 15).

According to Riegl, the ancient Egyptians produced architecture, sculpture, and artwork that was to be engaged with at close proximity, or nähzeitig. Individual objects are strongly separated from others as well as the background, and presented in a single plane, appearing flat with few shadows or suggestions of depth. This mode of haptic perception emphasises materiality, solidity, and individuality (Iversen, 1993).

Figures and objects were depicted from a single orthographic viewpoint, showing as much as possible

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314 Even in instances where Riegl apparently rediscovers “haptic objectivism” in later works, it is not the same hapticity that was exhibited in previous periods: “The screw of time has seemingly turned all the way back to its old position, yet in reality it has ended up one full turn higher, and is now removed by a deep furrow from that point at which it seemed once again to have arrived” (Riegl, 2004 [1902], p. 187).

315 For an alternative translation, see Jennings (2008, p. 10).

316 While Winkes translates “haptisch” as “tactile”, I will instead use the term “haptic” as Riegl had intended it: in a later essay Riegl makes a point of clarifying his use of haptic rather than tactile, since the latter “could lead to misunderstanding”: the term ‘haptic’, Riegl explains, is borrowed from physiology (Dessior, 1892) and is therefore “the more fitting designation” (Riegl, 2004 [1902], p. 190, n.1).

317 The origin of Riegl’s thesis of haptic/optic distinction is not entirely clear: it may be understood as an advancement of the ideas of his tutor, Robert Zimmermann, who had previously written about optical and tactile arts, differentiating between each depending on the primary means of apperception involved. Thus, painting was optic, sculpture was tactile, and reliefs were capable of wavering between the two (Zimmermann, 1865). Elsewhere, Susan Buck-Morss maintains that it comes from “Adorno’s theory of regressive change in aural perception” (Buck-Morss, 1977, p. 161). It has also been suggested that it was developed from the sense descriptive categories devised by the sculptor Adolf von Hildebrand (Hildebrand, 1994 [1893]), who may, in turn, have adopted these ideas from Hermann von Helmholtz’s Optik (1867). See also Hatfield (1990); Ionescu (2013); Iversen (1993, p. 9); and Johnson (1983 [1972], pp. 286-289).

318 The delineation of haptic/optic perception is more clearly expressed in Late Roman or Oriental? (Riegl, 2004 [1902]). Here, haptic perception of Ancient Egyptian mouldings is used as an example of how “we are often stunned when, while letting our fingertips glide over the ancient Egyptian relief figures, we perceive the most delicate moulding, whereas from a distance, the eye appears only to take in an undifferentiated lifeless surface” (Riegl, 2004 [1902], p. 182).
without suggesting that there was any more to see (that there was another *unseen* side, behind or beyond what was depicted). Similarly, where colour was applied, it was done so in single, unvarying tones.

The Late Roman mode of perception, by contrast is optical and designed to be viewed at a distance (in *fernsichtig*), so that the properties of the object could be correctly interpreted from chiaroscuro effects. Late Roman architecture is designed with openings, perforations and curved forms to give a clear impression of depth, shape, and space, such that the form could be accurately perceived by the eye at a distance (without the proximal confirmation of touch).

The second phase represents a middle-distance of perception between *Fernsicht* and *Nahsicht*, known as *Normalsicht*, and is typified by the visual arts of the ancient Greeks.

Despite Riegl’s assertion that different periods are of equal importance, an intellectual dualism is evident in the way that optical perception is presented as stressing subjectivity and intellectual reflection, while the haptic perception is a more primitive form of perception that favours objectivity and embodied corporeality (see Candlin, 2010, pp. 10-13).³¹⁹

The historiography of visual perception inspired other aesthetic theories, including those of Riegl’s Swiss contemporary, Heinrich Wölfflin.³²⁰ Like Riegl, Wölfflin maintained that each “new zeitgeist enforces a new form”, or put differently, that “different times give birth to different art” (Wölfflin, 1929 [1915], p. 9).

Wölfflin argued that the differences in aesthetic perception were exemplified by the “linear” artwork of the sixteenth century, and the “painterly” (or “draughtsmanly”) work of the seventeenth century (Wölfflin, 1929 [1915]).

In *linear* art and architecture, objects have a strong figure-ground relationship circumscribed by solid outlines and regular geometries. The object’s “tangible character” is perceived (objects are visually isolated and differentiated from one another) and “interest lies more in the perception of individual material objects as solid, tangible bodies” (Wölfflin, 1929 [1915], p. 14). With *painterly* works, however, the importance of the line is depreciated, and perception “surrender[s] itself to the mere visual appearance and can abandon ‘tangible’ design” (Wölfflin, 1929 [1915], pp. 27, 21). The stress put on the object’s visible limits is dissolved, and separate forms appear to merge together.

Wölfflin affirms that these perceptual differences are especially evident in architecture and in their different conceptions of space: the painterly presents a more masterly application of spatial arrangements,

³¹⁹ Because “the optical qualities disappear in the dark, [while] the tactile qualities remain”: the tactual properties of an object appear consistent, belonging to the object itself, whereas what we perceive visually seems to “depend to a greater degree on those chance circumstances in which the perceiving subject finds itself” (Riegl, 2004 [1902], p. 181)

³²⁰ Wölfflin’s credits Riegl’s “complete mastery of his material,” heralding his *haptic-optic* terminology as “especially effective” in elucidating this new (visual) history of art (Wölfflin, 2015 [1915], p. 73).
experimenting with volume, apertures and recesses – by playing with shadow, perspective and foreshortening. Conversely, linear architecture embraces symmetry, rhythm, and visual boundaries – with few openings or vistas. The “linear style is the style of distinctness plastically felt. The evenly firm and clear boundaries of solid objects give the spectator a feeling [...] as if he could move along them with his fingers” (Wölfflin, 1929 [1915], p. 21). Visually tracing the contours of the object, one retains “an element of physical grasping” (Wölfflin, 1929 [1915], p. 21). Here Wölfflin goes even further than Riegl, in suggesting that there is not simply a way of seeing that retains an element of tactility, but that in some cases the tactual impression we receive when looking at something may be as compelling as actual cutaneous contact.321

This notion of visual-hapticity was perhaps to reach its greatest expression in the works of the American art-critic, Bernard Berenson. Berenson much admired the work of Wölfflin,322 admitting that Wölfflin’s doctoral thesis from 1886 (a year before Berenson’s own graduation), “contains in essence, and more than in essence, my entire philosophy of art” (Berenson, 1963, p. 22). For Berenson though, the way architecture (or art) visually appeals to the sense of touch, was not simply a means of historical importance, but the defining characteristic of any artwork. This he referred to as its “tactile value”:

Through all the ages, and in every place, whenever a visual representation is recognized as a work of art and not as a mere artefact [...] it has tactile values. It may have much besides which is of more or less importance or none at all, but to be accepted as a work of art these other attractions must rest on a basis of tactile values [...] (Berenson, 1948, p. 66)

Berenson begins his Florentine Painters by stating that our sense of touch is “the test of reality” (Berenson, 1907 [1896], p. 4). When we are children, explains Berenson, it is “the sense of touch, helped on by movement, [that] teaches us to appreciate depth, the third dimension, both in objects and space” (Berenson, 1907 [1896], p. 4). Once learnt, we forget this haptic connection, and the fact that “every time our eyes recognise reality, we are, as a matter of fact, giving tactile values to retinal impressions” (Berenson, 1907 [1896], p. 4).

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321 Wölfflin even describes the tactile mode of visual perception as “that other tactile sense which relishes the kind of surface, the different skin of things” (Wölfflin, 1929 [1915], p. 27).
322 Though Berenson was jealous of Wölfflin’s artistic and academic influences, having “Burckhardt and Volkelt as teachers and generations of German thinkers, while I had what?” (Berenson, 1963, p. 23)
This then, was the task of the painter: to give a tangible sense of materiality and spatiality, by visually stimulating our sense of touch. As Berenson explains: “I must have the illusion of varying muscular sensations inside my palm and fingers [...] before I shall take it for granted as real, and let it affect me lastingly” (Berenson, 1907 [1896], pp. 4-5).323

Berenson maintained that through the “ideated sensations” of “tactile values”324 and “movement,” the greatest images are able to “convey a keener sense of reality, of life-likeness than the objects themselves!” (Berenson, 1907 [1896], pp. 5, 6).325 The greatness of an image is not measured by its visible similarity to its

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323 This thesis would be grounded in psychological research rather than “merely mystical or magical” hypotheses (K. Clark, 1981, p. 113): “we, I say, must either talk of it in terms of enjoyment and the psychology thereof, or – talk nonsense!” (Berenson, 1908 [1897], p. 34)

324 Curiously, Berenson makes a point of shifting terminology from “tactile values” (in Florentine Painters), to “form” (in Central Italian Painters). See his explanation in Berenson (1908 [1897], p. 33)

325 In fact, in his follow up essay, Central Italian Painters, he states quite unequivocally, that “art should be more evocative than actuality” (Berenson, 1908 [1897], p. 36)
referent, but by the speed and power of the tactual impressions created in the eye, mind and body of the beholder: ideated sensations of “material significance” such as texture, form, solidity, and mass (Berenson, 1907 [1896], p. 17).

This capacity to “rouse the tactile sense” without the undesirable tactual elements (potential pain, muscular effort or fatigue) that may accompany a physical encounter, is presented as an inexhaustible source of “life enhancing pleasure” (Berenson, 1908 [1897], p. 35). So much so that after years of viewing, we do not grow more weary of it, but fall “more in love with it than ever because of these qualities [...which] have the power of directly enhancing life.” (Berenson, 1908 [1897], p. 35)

Besides the potential material significance offered by the appearance of forms, we are also afforded another sense of hapticity by the appearance of the space itself. This is what Berenson describes as “space-composition” (Berenson, 1908 [1897], pp. 95-103). Unlike “ordinary composition” (which may be “judged laterally, or up and down on a flat surface”), spatial composition incites a sense of “depth” which has a more potent [...] immediate effect [...] on the vasomotor system, with every change of space we suffer on the instant change in our circulations and our breathing – a change which we become aware of as a feeling of heightened or lowered vitality. (Berenson, 1908 [1897], p. 97).

Hence, for Berenson, architecture is “the most specific and the most powerful [manifestation] of the art of space-composition.” (Berenson, 1908 [1897], p. 97).

This relationship between the body and space is what the German art historian, August Schmarsow described as “the inmost essence of architecture” (Schmarsow, 1994 [1893], p. 282; see also Schwarzer, 1991). According to Schmarsow, architecture “is the creatress of space [Raumgestalterin], since it combines our “sense of space” [Raumgefühl] with our “spatial imagination” [Raumphantasie] (Schmarsow, 1994 [1893], p. 287).

Like his contemporaries, Riegl and Wölfflin, Schmarsow was strongly influenced by the recent works on aesthetic perception by Wundt (1863), Lipps (1891) and Lotze (1868), and combined research from physiological psychology with his phenomenological investigations, to affirm that our visual perceptions of

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326 Indeed there is only so much pleasure that may be derived from “precision” (Berenson, 1908 [1897]): “I care little that the picture endowed with the gift of evoking such [tactile] feelings has faults [...] I forgive them all, because I have much better to do than to dwell upon faults.” (Berenson, 1907 [1896], p. 14)

327 This is the sort of “haptic space” Burch has in mind when he talks about the “the tangible proof of three-dimensionality” that cinema can offer (Burch, 1990, p. 181).

328 On the nature of depth perception, see also Merleau-Ponty (1980; 2005 [1945], pp. 297-311)

329 Though it should be noted that Berenson believed the expression of space-composition found in painting was of a superior nature to that of architecture: “not the upstart rival of architecture, but its lovelier sister, an art capable of effects finer, more enchanting, more surely winning.” (Berenson, 1908 [1897], p. 99)
space are created from and with our bodies: “The intuited form of space, which surrounds us [...] consists of the residues of sensory experience to which the muscular sensations of our body, the sensitivity of our skin, and the structure of our body all contribute.” (Schmarsow, 1994 [1893], p. 286). Or differently put, “all architectural forms depend on bodily structure, sensation, and movement” (Schwarzer, 1991, p. 55).

This is what set Schmarsow’s thesis of architectural perception apart from both Riegl and Wölfflin, whose theories of an evolution of architectural perception (of haptic and optic modes of seeing) focused on how the form of the building impressed itself upon the (seemingly static) beholder (Schwarzer, 1991).330 For Schmarsow, the beholder is a motive and embodied element that cannot be abstracted from the process of perception since the natural axis of our bodies dictates the orientation of our surrounding space (with a definite up/down, left/right, front/back), and this in turn gives the space meaning and transforms it into a “living space” (Schmarsow, 1994 [1893], p. 289).331

When we look at architecture we see ourselves, since the image of architecture is based on our body-image (Schilder, 2013 [1950]), not the image of our body.332 Architecture is therefore principally a corporeal manifestation of how we intuit space based on the way in which our bodies interact with the world (Schmarsow, 1994 [1893], p. 288; Schwarzer, 1991). When looking at architecture, visible space may be seen by the eye, but it is felt and assessed by the sensible body.333

We have so far two aspects of visual hapticity. The first is what Mădălina Diaconu has described as “that extended look which I call tactile, because it pertains to the corporeality of things” (Diaconu, 2011b, p. 22). This is a visual caress of surfaces that incites past sensations of tactual properties (including texture, solidity, shape, size, and so on), from our tactile imagination (Katz, 2013 [1925]).334 In the second instance,

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330 Contrary to Riegl, Schmarsow argued that the subjective-optical vision has always been present in architecture, and illustrates his rebuttal with reference to the interior of ancient Egyptian architecture, and the way in which the space may be portioned off into different “acts” which call upon the body differently, inducing a variable “performance of the experience” and likewise, of apperception (Schmarsow, 1905, p. 192)

331 In fact, Schmarsow assigned particular axial dimensions to each of the visual arts: Sculpture is the art of verticality (Körperbildnerin), whose creative principle is defined by proportion; painting is a horizontal art (Flächengestalterin) based on principles of symmetry; and architecture utilises depth (Raumgestalterin) – the defining dimension of spatiality – whose creative principle is that of rhythm (Mallgrave & Ikonomou, 1994a, p. 63). The importance of our bodies in the construction of architectural space has been reiterated more recently by Alberto Pérez-Gómez, when he said that our “embodied orientation is fundamental for our perception of meaning” (Pérez-Gómez, 2011, p. 754).

332 As Frascari explains, “the project of a handle results from the mold of the grasp of the hand rather than from the formal representation of the hand itself” (Frascari, 1987b, p. 22). See also Frascari (2002), and my discussion on mimetic architecture and Einfühlung in Chapter Four

333 As Böhme observes, man is indeed the measure of architecture, but not in the way Vitruvius or Polykleitos had intended (Böhme, 2003, p. 403; 2017, p. 83)

334 “it may well be said that the impression received by the fingers provides the representative tactual image for nearly all materials [...] Our image of the world, therefore, insofar as it is a tactual image, is mediated through the touching hand” (Katz, 2013 [1925], pp. 63-64). See also Diderot (1916 [1749], pp. 83-86)
our visual perception of architecture is also a perception of corporeally defined space that is intuitively felt, providing a sense of depth and with it the proprioceptive potential for action and expression.
(Syn)aesthetic architecture and the unity of appearances

The problem with the theories of aesthetic perception proffered by Riegl, Wölfflin, and Berenson, is that they are ultimately limited to modifications of visual perception which preserve the distinction between ideas presented to the senses (aistheta) and the intellect (noeta) (the body and the mind). Such thinking perpetuates the Kantian view of pure sensuous intuition (“Anschauung”), which maintains a distinction between spatial arts, such as painting (experienced as exteroception), and temporal arts, like music (experienced as interoception) (Rée, 2000). Accordingly, the visual arts express ideas of sensible intuition (through sensory perception) by making figures in space. This is comprised of those that work through “sensible truth” – “offering figure to two senses, sight and touch” (architecture and sculpture), and those that practice “sensible illusion” – which “offers them only to sight” (painting and landscape gardening) (Kant, 1987 [1790], pp. 190-191).

Understood in this context, it is perhaps easy to see how, in the nineteenth century, Adolf Gottlieb Fiedler (Fiedler, 1887, 1978 [1876]) and Adolf von Hildebrand (Hildebrand, 1994 [1893]), were able to conceive of artistic perception as a theory of “pure visibility” (“reine Sichtbarkeit”). Such theories formed part of a larger trend which considered the aesthetic experience of art and architecture to be predominantly visual – received (and felt) as an almost exclusively optical phenomenon.335

What gets lost from perspective is the ways in which the senses work together. In many respects, this sensory synergy was at the core of Alexander Gottlieb Baumgarten’s philosophy.336 Contrary to the dualism of Kantian transcendentalism,337 Baumgarten suggested that the mind and body are interrelated,338 and that what logic has done for intellectual cognition, aesthetics would do for sensory cognition (Gregor, 1983).

Where Baumgarten radically departs from Kant is in suggesting that our aesthetic sensibility comes about through a confused [confusio] presentation of sensation. And while both Kant and Leibniz regard this confusion as an unwanted impediment to clear reason and good judgement (Kant, 1987 [1790], pp. 73-75; Leibniz, 1898, p. 422),339 it has since been proposed that Baumgarten’s use of “confusion” ought not to be

335 For a more comprehensive explanation of this development, see Rykwert (2008). For an overview, see also Mundt (1959). For more on the influence of “pure visibility” (Fiedler and Hildebrand) on aesthetic theory and architecture see Mallgrave and Ikonomou (1994a, pp. 29-39); Morgenthaler (2015, pp. 65-76); Pinotti (2005)
336 Though Baumgarten stresses the importance of cognitive reflection, he also recognises that “reason is more exact than the senses, but it is also poorer”, affirming that any intellectualisation may be a concentration of thought but also a dilution of experience, in which the non-intellectual properties are discarded. (Baumgarten, 1961 [1750], p. 363)
337 Which actively promoting the virtues of the mind [res cogitans] over and above the sensible/fallible body [res extensa]
338 Baumgarten actually states that logic is the elder sister of aesthetics (Baumgarten, 1961 [1750], p. 5)
339 Kant was also dismissive of possibility aesthetic perception offered by the ‘dark’ or ‘lower’ senses (smell, taste, and touch) (see for instance, Kant, 2005).
understood in any derogatory sense but rather as “fusion” – as in, “the inseparability of notes that characterise things as they present themselves to the senses” (Gregor, 1983, p. 364).340

Seen in this light, aesthetic perception is perhaps better understood as something more akin to what Merleau-Ponty describes as the “intersensory unity of the thing” (Merleau-Ponty, 2005 [1945], p. 277):

The unity and identity of the tactile phenomenon [...] are founded upon the unity and identity of the body as a synergic totality [...] thanks to this unity of the body, the tactile perceptions gained through an organ are immediately translated into the language of the rest.
(Merleau-Ponty, 2005 [1945], p. 369)341

This inter-sensory unity could be better understood as a form of “synaesthetic perception” (Merleau-Ponty, 2005 [1945], p. 266). So what is synaesthetic perception and how does it work?

Synaesthesia is a condition that affects about 1 in 2000 people. For these individuals, the stimulation of one sense modality is simultaneously accompanied by the activation of one or more additional sense modalities. Someone with synaesthesia may, for instance, see colours when they hear sounds342 or hear sounds when they taste flavours.

In Against Nature, one of Joris-Karl Huysmans’ characters describes the synaesthetic experience of playing his “mouth organ” – perceiving different musical instruments and sounds with each of the different liquors that he consumes:

[...] dry curacoa matched the clarinet whose note is penetrating and velvety kummel, the oboe with its sonorous, nasal resonance crème de menthe and anisate, the flute, at once honeyed and pungent, whining and sweet; on the other hand kirsch, to complete the orchestra, resonates in a way extraordinarily like the trumpet; gin and whisky overpower the palate with the strident blasts of their cornets and trombones; liquor brandy booms forth with the deafening racket of the tubas, to the accompaniment of the rolling thunder of the cymbals and the drum as the rakis of Chios and the mastics strike with all their might upon the skin of the mouth. (Huysmans, 1998, p. 39)343

340 (Gregor, 1983; Howes, 2011a; Jütte, 2005). See also translators comments in Baumgarten’s Reflections on Poetry (1954 [1735], p. 21)
341 And elsewhere, “my body is a ready-made system of equivalents and transpositions from one sense to another. The senses translate each other without any need of an interpreter, and are mutually comprehensible without the intervention of any idea. These remarks enable us to appreciate to the full Herder’s words: ‘Man is a permanent sensorium commune’” (Merleau-Ponty, 2005 [1945], p. 273. See also p.275).
342 Sound-colour synaesthesia (in French, audition coloreé, in German, Farbenheren) is the oldest reported type of synaesthesia, dating back to Georg Sachs’ medical dissertation in 1812 (Serrano, Riccò, & Day, 2014, p. 52).
343 In this way, the synaesthete, Des Esseintes, was able “to play himself silent melodies on his tongue” (Huysmans, 1998, p. 40). See also Frascari (2003)
The word, *synaesthesia*, comes from the Greek: *syn-* (together, in concert or combination) and *aesthesis* (to feel or perceive with the senses). Although the phenomenon has been reported on for two hundred years, the definition of synaesthesia (and diagnosis of synaesthetes) is only a relatively recent one, and aside from a brief infatuation in the late eighteenth century, synaesthesia has received surprisingly little academic attention, with cases often being overlooked as a quirk or hallucination.\(^{344}\)

One of the reasons why the legitimacy of this condition has been dismissed for so long is due in part to the scarcity of reported cases, as well as a considerable diffusion concerning the particular senses effected.\(^{345}\) For instance, one synaesthete might have taste-sound synaesthesia, whereby particular flavours may induce the perception of certain sounds, while another might have sight-smell synaesthesia, in which case certain words might trigger the perception of particular odours. Furthermore, the sensory content of each perception also differs from one synaesthete to another, such that two individuals with taste-sound synaesthesia would not be expected to perceive the same sounds from the same flavours tasted. In each instance, however, there remains an *inducer*, which differentiates it from mere hallucinations,\(^{346}\) and is therefore more akin to a perceptive act than a wilful noetic conception\(^{347}\) – a notion supported by recent euroimaging research (Ward, 2013).\(^{348}\)

Famous synaesthetes include the philosopher, Ludwig Wittgenstein, the author, Vladimir Nabokov, the composer, Alexander Scriabin, and (probably) the artist Wassily Kandinsky, many of whom embraced the condition in their artistic endeavours. In 1810, Scriabin, created the single movement symphonic poem *Promethius: poems of fire*. A synesthetic composition of colour and sound, the piece required the construction of a new instrument, *Luce* or *Cavier des Luminères* (also known as a ‘colour organ’), where each note or key would generate particular colours or colour combinations upon a screen (James M. Barker, 2012).\(^{349}\) Similarly Kandinsky created “colour-tone dramas” that combined colour, music, and emotion (such as the single act opera, *The Yellow Sand*, 1909).\(^{350}\)

\(^{344}\) (Driver & Spence, 2000; Harrison, 2001; Serrano, et al., 2014; Ward, 2013).
\(^{345}\) Another cause for dismissal was the popularity of behaviourism that was, for the most part, incompatible with the notion of synaesthesia, and dismissed it as simply a bad habit: erroneous association of sensory binding learnt over time (Howells, 1944)
\(^{346}\) Such as those of Macbeth discussed in Chapter Two
\(^{347}\) This also means that in most cases synaesthetes have little or no control over the onset or content of what they experience (Ward, 2013)
\(^{348}\) One such study found that the area of the brain that responds to colour perception (the V4 region of the fusiform cortex) is activated when grapheme-colour synaesthetes see monochromatic letters or words (Ward, 2013)
\(^{349}\) In 2010, a recent doctoral candidate Anna Gawboy (Yale School of Music), worked alongside conductor, Toshiyuki Shimada (Yale symphony orchestra) and lighting-designer, Justin Townsend, to recreate Scriabin’s spectacle for a special centennial performance in Yale’s Woolsey Hall (Gawboy, 2010)
\(^{350}\) See Pevitts (1980)
The idea of synaesthetic perception was of interest to many artists who sought to express one sensation through another.351 At the same time that Kandinsky was painting his ‘sound’ paintings (‘Klangen’), the Italian Futurist poet, Filippo Tommaso Marinetti, created his first ‘tactile table’ (1911).352 These tables (later “tactile boards”) were created from a “harmonious combination of tactile values” to encourage the education of touch, by taking the hand on a “journey” across the varied terrain of the table surface (Marinetti, 2005, p. 329).353

351 In poetry, synaesthetic expressions are often discussed in terms of “correspondences” (Deutsch, 2012). Two early examples include Baudelaire’s Correspondences (1854), and Arthur Rimbaud’s Vowels (1871). See also Classen (1998, pp. 109-137)

352 Unlike the other senses, Marinetti believed that the sense of touch remains “a mediocre conductor of thought”, and proposed “the first educational scale of touch […] a scale of tactile values” as part of the Tattilismo (“art of touch”). Marinetti begins with a series of monastic exercises which prepare the mind and body appropriately in order more fully to engage “tactilistically” (Marinetti, 2005, p. 329). These include: sensory conditioning (wearing gloves for several days); sensory deprivation (to recognise each object in a room in complete darkness); immersive concentration (distinguishing temperature currents in the sea with various body parts).

353 The “Sudan-Parigi” (Sudan-Paris) table, for instance, was designed around three central experiences: the Sudan, the sea, and Paris. “In the Sudan part this table has spongy material, sandpaper, wool, pig’s bristle, and wire bristles. (Crude, greasy, rough, sharp, burning tactile values, that evoke African visions in the mind of the toucher.) In the sea part, the table has different grades of emery paper. (Slippery, metallic, cool, elastic, marine tactile values.) In the Paris part, the table has silk, watered silk, velvet, and large and small feathers. (Soft, very delicate, warm and cool at once, artificial, civilised.)” (Marinetti, 2005, pp. 330-331)
Later, Marinetti promoted a rediscovery of the sense of touch in gastronomy by holding tactile dinner parties. Guests would arrive in the appropriate attire (preferably pyjamas) “made of, or covered with a different tactile material such as sponge, cork, sandpaper, felt, etc.” (cited in Harrison, 2001, pp. 1-2). A series of ambitious dishes would be presented, boasting a variety of flavours, textures, size, shapes, weights, and temperatures (David, 1999 [1954], p. 65). Throughout the meal guests ate with their right hand (or else directly, ‘face-first’) while their left hands fondled the various complimentary materials of their fellow guest’s clothes, and waiters periodically sprayed (warmed) perfumes (Harrison, 2001).

Albeit a rather unusual example, the experiments of Tattilismo undertaken by Marinetti nicely illustrate a phenomenon well known in marketing circles and recently confirmed by studies in neuroscience – that of cross-modal sensory perception, whereby our overall feeling or impression of something (an object, place, person etc.) is influenced by numerous sensory cues that superimpose one another.354

Spence and Gallace use the term “affective ventriloquism” to describe how the experiential attributes of an object or environment perceived via one sense modality (such as vision) can pull or bias an individual’s qualitative experiences from other sense modalities “into alignment, and by so doing, modulate a person’s overall (multisensory)” experience of that object or environment (2011, p. 267).

One study found, for example, that the perceived quality of a beverage can be affected by the quality of the vessel, or simply by the written description of its contents (Krishna, 2013; Krishna & Morrin, 2008). Similar research has also shown that the way in which a meal is visually presented/composed upon the plate, affects how appetising it appears, and the quality of the subsequent taste experience (Michel, Velasco, Gatti, & Spence, 2014).355

This demonstrates that our qualitative environmental perceptions may be primed, if not conditioned, by the anticipated perception we have from (predominantly) one sense (taste) as it is stimulated by another (written/visual).356 This extends to our tactual perceptions as well. For instance, the feel of a perfume bottle (weight, shape, smoothness) can influence not only the perception of quality, but also gender and brand recognition (Schifferstein & Hekkert, 2008). Another study demonstrated that whether a subject had a positive or negative impression of another person (stranger) could be subconsciously influenced by whether they had just held a hot or cold drink (L. E. Williams & Bargh, 2008).

If a moment’s physical contact with a relatively warm or cold material can affect our emotional or moral feelings towards complete strangers, imagine what we could achieve with a well-placed touch in our architectural environments. Consider the crafted details of Alvar Aalto: the feel of the leather-wrapped

354 See Chapter One
355 On the importance of staging see Epilogue, as well as Böhme (2013a, 2013d)
356 For the ways in which our phenomenal perception is informed by our expectations, see Chapter Two
handrail in the Finlandia Hall, or the sensuous material combination of smooth Carrara marble and rough sawn timber in the lobby of the University of Jyväskylä. As Pallasmaa explains, “Aalto was consciously concerned with all the senses in his architecture [...] and was clearly more interested in the encounter of the object and the body of the user than in mere visual qualities” (Pallasmaa, 2008 [1996], pp. 70-71).

In fact, synaesthesia is not an entirely unfamiliar concept for architects. Norberg-Schulz, for instance, speaks of synaesthesia as a “kind of intermediary object [...that] results from the confusion of different sense modalities” which colours (literally in some cases) an individual’s perception (Norberg-Schulz, 1997 [1965], p. 49). And although the condition of synaesthesia may sound fairly exotic and unusual, we actually encounter (and employ) various forms of synaesthetic perception every day.

This is evident in our use of language, and is especially pronounced when we employ tactual terms. For instance, a surface can feel rough, smooth, sharp, soft etc. But we may also legitimately employ these same terms to describe the visible appearance of something (that we have not touched) or even the quality of particular sounds. The same holds true for other cross-sensory expressions, such as loud colours, sweet sounds, sharp smells and so on (Merleau-Ponty, 1964 [1948], p. 50; J. M. Williams, 1976).

Curiously, many of these sensory adjectives also have cross-sensory roots: the word “touch” is of echoic origin (from tok, the sound of a light blow or knock), “taste” originally meant “touch,” “flavour” once meant “odour,” and “pungent” is derived from pungere, meaning “to prick/stab” (Classen, 1993, pp. 51-75). We also talk of a person’s actions or words as being harsh or rough, or contrariwise of being a smooth or sweet talker. If someone is described as warm, they are affable and welcoming, whereas a cold person is someone who is misanthropic or callous (Montagu, 1978, pp. 5-7).

Consider a passage from Mervin Peake’s Gormenghast, which describes the haptic perception of looking at the faces of three professors: “In running the eye from one face to the next, a similar sensation was experienced as when the hand is run from glass to sandpaper, from sandpaper to porridge.” (Peake, 1999 [1946], p. 427). What we see when we read is visual insofar as we see the words written on the page. But what we perceive upon reading them is a delicious combination of sensory suggestions and stimulants:

357 Like many other authors mentioned in this chapter, Norberg-Schulz recognises that this intertwining of sensations is more pronounced in children, ‘primitive man’, and in some aspects of other non-Western cultures (such as the Chinese and Zuni-Indians) (Norberg-Schulz, 1997 [1965]).

358 (Böhme, 2013e; Classen, 1993; Garrington, 2013; Howes, 2006, 2011a; Merleau-Ponty, 2005 [1945])

359 Peake’s almost tangible expression of haptic-visuality continues: “[...as regards] the sandpaper face [...] the eyes were forced to move slowly over the surface so roughened with undergrowth, so dangerous with its potholes and bony outcrops, its silted gullies and thorny wastes, that it was a wonder the eye ever reached the other side. Conversely, with the glassy face, it was all that an eye could do to keep from sliding off it. As for the third visage [...] to traverse it with a sweep of the eye was as impossible as to move gradually across the glazed face. It was a case of slow wading [...] And so for an eye to take an innocent run across these three, there lay ahead a strange ordeal, by rock and undergrowth, by slippery ice and by patient paddling.” (Peake, 1999 [1946], p. 427)
tactual imagery and memories of matter with all their associated and embodied sensations (of the hard slippery surface of glass, or the viscous liquidity of porridge). A less florid example might simply be the dish descriptors on a menu or a television advertisement for perfume. In each instance one sense (vision) is the primary medium through which another sense (taste/smell) is incited.

This synonymous sensory slippage has been studied in psychology since the nineteenth century. Wölfflin uses the term “analogies of sensation” to describe “the relationship that we are in the habit of assuming between the sensations of the different senses [...that] seem to be related by the equal gravity of their emotional tone.” (Wölfflin, 1994 [1886], p. 158). Nearly seventy years earlier, Goethe published his *Theory of Colour* (Goethe, 1840 [1810]), in which he presents a comprehensive explanation of how colours can affect how we feel (which in turn affects how we perceive): “yellow [...] has a serene, gay, softly exciting character,” whereas blue may give the impression of coldness, gloom or melancholia (Goethe, 1840 [1810], pp. 307, 311).

Gernot Böhme notes that we often use synaesthetic descriptions in reference to the feeling of spaces, that is to say, their “atmospheric characters” (Böhme, 2013e). Building on Goethe’s *Theory*, Böhme explains that the sensory impression of coldness may come about through different means: a blue room may be perceived as cold, but this may also be true of a room that is low in temperature, a room that is tiled white, or else it may simply “radiate coldness due to the installed equipment and the business-like demeanour of the staff,” as in, for instance, an operating theatre (Böhme, 2013e, p. 32). In this respect, “generating the character of coldness, blue can be replaced by smooth repellent surfaces, [...] by rationalised manners, or maybe also by a certain glaring lighting” (Böhme, 2013e, p. 32). How a place feels therefore, is the product of a synaesthetic combination of sensory stimulants and the atmosphere that is generated.

An alternative (though not incompatible) theory of synaesthetic perception, is presented by Merleau-Ponty, who argues that we feel what we see, because what we see is not simply the visual component of sensory perception, but the totality of appearance, which is irrevocably more-than visual: “I perceive in a total way with my whole being; I grasp a unique structure of the thing, a unique way of being” (Merleau-Ponty, 1964 [1948], p. 50).

In other words, what we perceive is not the product of our mental faculties (contra Kant) synthesising separate sensory givens radiating from the object and received by the correspondent sense organs. Rather, my perception “takes advantage” of the “general synthesis” of the object, “and this is what I mean when I

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360 From Wundt (1874, p. 431)
361 See Chapter Four
362 For Merleau-Ponty, this is our “primordial” mode of perception – how we were born perceiving. Indeed, there is now evidence to suggest that we are all naturally born synaesthetes, and that this ability begins to dissolve after our first three months (Harrison, 2001, pp. 14-16)
say that I perceive with my body or my senses, since my body and my senses are precisely that familiarity with the world born of habit” (Merleau-Ponty, 2005 [1945], p. 277). A piece of wood, for example,

[...] is neither a collection of colours and tactile data, not even their total Gestalt, but something from which there emanates a woody essence; these ‘sensory givens’ modulate a certain theme or illustrate a certain style which is the wood itself, and which creates, round this piece of wood and the perception I have of it, a horizon of significance. (Merleau-Ponty, 2005 [1945], p. 523)

It makes little sense, therefore, to talk of only some of an object’s sensible characteristics, since this is neither what is perceived nor what is given. Even an optical property, such as colour, is never simply a colour, since it is always perceived as the colour of this thing, and it is the material essence of the thing that affects how the colour is felt. Thus, it is

[...] impossible completely to describe the colour of the carpet without saying that it is a carpet, made of wool, and without implying in this colour a certain tactile value, a certain weight and a certain resistance to sound [...] the significance of which is indistinguishable from its total appearance. (Merleau-Ponty, 2005 [1945], p. 376)

Husserl maintained that such multisensoriality is “co‐given”, and where we feel the particular non‐visual qualities of visibility, these are “co‐seen”: “the actuality of silky tactuality co‐presentifies a dull lustre [...] There is an exact analogy between the mode or form of the visual filling of corporeality and the tactual [...] despite the different mode of sensuous givenness.” (Husserl, 2000 [1952], pp. 41‐42).

Merleau‐Ponty contends that this synaesthetic perception was what made Cézanne’s artwork so powerfully evocative. Hence, when Cézanne speaks of “the pure blue smell of pine, which is sharp in the sun,” “the fresh green smell of meadows in the morning,” or “the smell of stones and distant marble” in his paintings, he is not describing sensory properties that belong to the painting itself (sniffing the painting with closed eyes would not have the same effect), but the affect that is felt (as having this or that smell, sound, warmth, texture, etc.) when perceiving certain works of art (Cézanne & Gasquet, 1991, p. 151; see also Merleau-Ponty, 1964 [1948], p. 50). This is achieved not so much through visible resemblance, as through our phenomenological and synaesthetic perception, whereby the choice and arrangement of colour [...] signifies by itself all the responses which would be elicited through an examination by the remaining senses that a thing would not have this colour had it not also this shape, these tactile properties, this resonance, this odour, and that the thing is the absolute fullness which my undivided existence projects before itself. (Merleau-Ponty, 2005 [1945], pp. 371‐372)

This process of visually stimulating a more‐than visual experience is what Cézanne referred to as réalisation. Indeed, this was the task of the painter: “to unveil the means, visible and not otherwise, by
which [the mountain] makes itself a mountain before our eyes [...]” (Merleau-Ponty, 1992 [1964], p. 166). To use only the relations between colours to evoke the sensory richness of embodied experience, réalisation reveals the hitherto taken for granted dynamic of haptic perception: a “magical theory of vision” that affords us the capacity to feel what we see (Merleau-Ponty, 1992 [1964], p. 166).363

This is why art does not need to suggest or evoke “tactile sensations” – and in this regard, “the young Berenson [...] could hardly have been more mistaken” (Merleau-Ponty, 1992 [1964], p. 166) – since these are only partial qualities that always already belong to the visible object.364 On the contrary, art

[...] gives visible existence to what profane vision believes to be invisible [...] This voracious vision, reaching beyond the ‘visual givens,’ opens upon a texture of Being of which the discrete sensorial messages are only the punctuations or the caesurae. The eye lives in this texture as man lives in his house. (Merleau-Ponty, 1992 [1964], p. 166)

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363 For a more thorough discussion of Cézanne’s theory of vision and réalisation, see L. Fischer (2015, pp. 141-168)
364 “[...] the visible spectacle belongs to the touch neither more nor less than do the ‘tactile qualities.’ We must habituate ourselves to think that every visible is cut out in the tangible, every tactile being in some manner promised to visibility, and that there is encroachment, infringement, not only between the touched and the touching, but also between the tangible and the visible, which is encrusted in it [...]” (Merleau-Ponty, 1968a, p. 134)
This is how haptic images differ from photographs or imagining techniques that aim only at visual imitation (such as photorealistic renders). Haptic images exploit our synaesthetic faculties to make "visible how the world touches us" (Merleau-Ponty, 1964, p. 18).\footnote{See also Pinotti (2005)}
Touching images of architecture

Vision does not penetrate, but glides along swerves and follows along departures. It is a touching that does not absorb but moves along lines and recesses, inscribing and exscribing the body. A mobile, unstable caress, seeing the image [...] with touches from other senses, smells, tastes, timbres, or even, with sounds, from the senses of words. (Nancy, 2008a, pp. 45-47)

This chapter has explored the relationship between vision and touch. I have shown that what we touch influences how we feel about what we see. And that what we see affects how we feel, as well as what (and how) we touch. The previous two chapters have illustrated how a prioritising of vision in architecture – to the denigration or neglect of the other non-visual senses – can have a detrimental effect on our sense of place, self, and belonging. At the same time, however, it would be naive to exclude or otherwise dismiss the centrality or power of vision and the image in architecture. This chapter has, therefore, not sought to promote an architecture of the non-visual, but rather a more inclusive haptic architecture of the more-than visual (Lorimer, 2005; Paterson, 2011). This thesis shows how the senses work together (synergistically) with the felt/feeling body (Leib) in action literally to make sense of our environment. How we use our senses always comes back to how we use (and have used) our bodies. Which is to say, our past experiences and embodied practices combine with the potential for action and intention within the realm possibilities afforded by our surroundings: the hapticity of habit. Merleau-Ponty summarises thus:

In short, my body is not only an object among all other objects, a nexus of sensible qualities among others, but an object which is sensitive to all the rest, which reverberates to all sounds, vibrates to all colours, and provides words with their primordial significance through the way in which it receives them. (Merleau-Ponty, 2005 [1945], p. 275)

As Benjamin noted, our apperception of architecture comes about, predominantly, through the physical enacting of embodied habits (or simply, “use”) and through concentrated “perception” (W. Benjamin, 2002 [1936]-b). Benjamin assigned the sense of touch to the former and vision to the latter, but I believe that this distinction is unnecessary (and unhelpful), as it infers that these two modes are separate. If, however, we adopt a synaesthetic approach we can review both of these acts as constitutive of haptic perceptions that (at any one time) emerge foregrounded within our conscious perception, or else dissolve into the background of embodied experience (Ihde, 1973; Ratcliffe, 2008, 2013).

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366 As Bruno succinctly states, “I understand habitation (in which habit is inscribed) to be a component of the notion of the haptic” (Bruno, 2002, p. 250)

367 Which is to say, that we perceive in a total way, with our whole being (Merleau-Ponty, 1964 [1948])

368 See Chapter Two
To better illustrate the potential influence of synesthetic perception on just one aspect of architectural design, the focus of this final section concerns the creation and perception of images: how architects and the media are using images and what they are using them for. The images that we – the public – are exposed to (or rather, are exposed to us), are *promotional images* (in books, journals, websites, etc.), which tend to take the form of a photograph or photorealistic render if the architecture is yet to be completed (standing in as a – pre-photograph: a surrogate for the surrogate).\(^{369}\) In this instance the image is intended to have a strong visual resemblance to its referent.

This predilection for optical synonymy has numerous consequences, not least of which is the creation of a consumable commodity that conditions our reception of the architectural referent. In so doing, this practice vindicates the (mistaken) assumption that how good a building looks (how well it can be photographed) is the measure how good that building is. This only encourages the propagation of photogenic designs and imagist architects, for whom “simulation is the aim […] Spatial proportions distended by lenses are now planned with the lens as an end. Uncritical and unambitious, the imagist-architect has allowed architecture to become simulation, oblivious to sensory essence.” (Holl, 2003b, p. 85).\(^{370}\)

Roland Barthes described these images as “pornographic”, whose overt exhibitionism affords the depraved gaze by offering instant visual gratification: “like a shop window which shows only one illuminated piece of jewellery, it is completely constituted by the presentation of only one thing” (Barthes, 1981 [1980], p. 41). As with photogenic images of architectural spectacles, “there is no punctum in the pornographic image; at most it amuses me (and even then boredom follows quickly)” (Barthes, 1981 [1980], p. 57).

Another consequence of these types of images is that they may too easily displace their referent (Figueiredo, 2011): if the experience of architecture is understood to be predominantly visual, then why would I need to inhabit a space that I have already seen (images of)? This allows for the detached and disembodied reception of visual architecture and encourages an apathetic passivity in its audience (Treib, 2011).\(^{371}\)

\(^{369}\) The photograph and the photorealistic render are quite different from one another (different purpose, means of creation, etc.), but this is not something I need to dwell on at this stage. I have explored these ideas elsewhere (Brand, 2012). See also Frascari’s distinction between chirographic, photographic, and typographic image production (2011, p. 53)

\(^{370}\) There are of course, exceptions, notably some of the works of Herzog and de Meuron, whose buildings have often been described as deliberately difficult to photograph (Ursprung, 2003a). See Chapter Five

\(^{371}\) Photographs and images created by others are, after all, products of “information” not “experience” (Frampton, 2004, p. 220). See Introduction
In each instance, we may see more, but we feel less. Disappointment is inevitable: either the physical architectural encounter fails to live up to the expectations incited by the image, or worse still “the building adds no more to the experience than the photograph gave” (Connah, 2001, p. 63).  

This is because we misuse the architectural image – we misunderstand its purpose and synaesthetic potential. Holl is quite correct to point out that no photograph can act as a sensorial surrogate for the embodied experience of architecture:

> While the cinematic experience of a stone cathedral might draw the observer through and above it […] only the architecture itself offers the tactile sensations of textured stone surfaces and polished wooden pews, the experience of light changing with movement, the smell and resonant sounds of space, the bodily relations of scale and proportion. All these combine within one complex experience. (Holl, 2003b, p. 86)

But this is not what we should want from a promotional image – it should not try to represent anything. Orthographic drawings (for building professionals) present the work of architecture through a clear and unambiguous process of signification. In this type of architectural image, non-visual phenomena are either omitted or transposed into highly codified and standardised elements and symbols (stripped of their quale). This is a legally enforced necessity for the accurate transmission of quantifiable information.

But the blueprint is to the experience of feeling architecture what the musical score is to the experience of feeling music: a visible transcription of non-visual ideas – an utterly different species of sensation from the performance itself, and completely meaningless to the uninitiated. The promotional image has neither legal, professional, nor moral obligations to limit itself in this respect, and so it is a puzzle why so many photographers and renderers aim to present architecture in a similar vernacular, without room for (mis)interpretation, intrigue, or multisensory stimulation. Why limit ourselves to the ‘realisation’ of only visual form?

Frascari suggests that images which aim to reproduce a visual facsimile of reality (through any medium), “are merely stylistic deceptions” (Frascari, 2003). He goes on to compare such “non-synaesthetic” images with “cardboard and plaster cakes on bakery shelves or the plastic sushi displayed in Japanese Restaurants’ windows,” appealing only to the eye (Frascari, 2003). In a similar sensory vein, Field uses the notion of “touch hunger” to describe the experience of a sense teased by other sensations without the possibility of gratification (Field, 2003 [2001]). Classen has suggested that this lack of potential tactile confirmation has left the sense of touch the “hungriest” of all the senses (Classen, 2005, p. 2). A meal that is well presented

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372 See also Frascari (2011); Kaminer (2011); and Willis (1999)
373 Frascari notes elsewhere that even the tools used for architectural drawing are analogous to those used on site by the builder (Frascari, 2007, p. 3)
(visually) may appear more appetising than another that is not (Michel, et al., 2014), but the real proof of the pudding remains in the tasting, otherwise we are just left frustrated, hungry, and disappointed.

How then, do we create more sensorially satisfying images of architecture? How could we be using the promotional image more effectively? In the words of William Mitchell, what is it these images want? Mitchell suggests that to ask what a picture wants is to ask what it is that it lacks: “what they do not possess, what cannot be attributed to them” (Mitchell, 2005, p. 10). This lacking is precisely what makes a surrogate a surrogate – it is a simulacrum that has some level of resemblance but remains an experientially abstracted substitute for the original (J. J. Gibson, 1954).

Surrogates will therefore always want something. This is not a condition which needs to be overcome nor compensated for. Every edit made towards idealised notions of visual perfection is a mouse click further away from the imperfection of reality (or at least, the visual representation of reality). Such moves do nothing towards documenting our experiences, they merely expose our own wants – what we lack: perfection. In the language of C. S. Pierce, the photograph may present an indexical image of the visible, but it remains, at best, an icon of the perceptual. Images of architecture are always found wanting in this respect.

At best, we may find ourselves wanting more – wanting to be immersed within the picture itself, haptically perceiving the sensorial content in its phenomenological entirety. At worst, we learn to want less, to satisfy our “touch hunger” on a faddish diet of visuality and pornographic images (tactual tofu!).

Photographs and images are made to be seen, as is architecture. But this is not how it is felt. It is not the purpose of architecture (or images), which is to touch us: to impress upon us the full phenomenology of embodied feeling, to resonate within us and affect us lastingly (Corbusier, 1986). Instead of trying to represent a sight, we should instead present a feeling.

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374 Mitchell spent most of his book (What Pictures Want) trying to exorcise this conundrum, and concludes, somewhat glibly, that pictures “simply want to be asked what they want, with the understanding that the answer may well be, nothing at all” (Mitchell, 2005, p. 48).

375 In a recent interview, the architectural visualiser, Henry Goss, contended that what makes rendered images appear real is “the addition of real world imperfections. Scratches in metal, splinters and chips in timber boards, even fingerprints” (Bryant, 2013).

376 Errare humanum est

377 This is the distinction that will always exist between the immersive, embodied and multisensory experience of something, and a photograph of it (or written description). This, Husserl explains, is the difference between the perceptual, imaginative, and signitive ways we have of attending to the world (Husserl, 2003, p. 107). See Epilogue

378 Like Benjamin’s Chinese painter (W. Benjamin, 2002 [1936]-b, p. 119)

379 See Chapter Four
So where do we go from here – how do we create more touching/haptic images of architecture? From my research into haptic-visuality, I propose three possible avenues towards more haptic experiences of architectural images:

1) Erotic Images: Barthes suggests that an alternative to the pornographic image is the “erotic image,” which does not attempt to present a unitary image, but instead suggests and seduces through a process of gradual reveals: images that offer only glimpses, that resist the compulsion to show themselves all at once, but instead leave room for the imagination, for desire and curiosity: “The punctum, then, is a kind of subtle beyond – as if the image launches desire beyond what it permits us to see.” (Barthes, 1981 [1980], p. 59). This I believe, should be the motivation of the promotional image: promoting desire, provoking intrigue and interest to encounter these spaces in their experiential totality. One way of achieving this therefore is to focus on details: close up images that capture the textural surface treatments and the felt fabric of matter – what the hand sees. An architectural review in this instance, would present a pallet of materiality – tactual tasters of what is to come. Perhaps even some architectonic details that represent the overall approach to the design process (attention to detail, material composition, etc.).

2) Collage: like Marinetti’s tactile tables, this might be a sort of sensory bricolage, where images are formed from everyday materials (not necessarily present in the building itself) that generate the feeling of being in the building or moving between spaces. Architectural examples include images created by Eric Owen Moss (such as those of Fun House), Diller and Scofidio (Case No. 00-17163), Christine Hawley (e.g. Peckham House), and Ben Nicholson (Appliance House).

3) Synaesthetic Images: what Frascari describes as “cross-sensual emotive constructs” (Frascari, 2003). Images of this sort have been known by other names – such as the ‘poetic image,’ ‘embodied image,’ and ‘non-trivial’ image – but all would smell as sweet, each based upon

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380 As Barthes says, “detail attracts me […] This detail is the punctum” that may transcend the homogeneity of pornographic images, to the alluring heights of the erotic image (Barthes, 1981 [1980], pp. 42, 57). On the narrative capacity of details, see Frascari (1983); and Holl (2006)

381 See Chapter Five

382 The meaning and application of these terms may differ slightly from one author to the next, but there remain strong similarities. The “poetic image refers to an evocative, affective and meaningful sensory experience that is layered, associative and dynamic, and in constant interaction with our memory and desires […] It entices our sense […] It occupies our mind, conditions our thoughts and feelings, and gives rise to an imaginative reality.” (Pallasmaa, 2011a, p. 41). The “embodied image is a spatialized, materialised and multisensory lived experience.” (Pallasmaa, 2011a, p. 11). And “non-trivial” images are those that “belong to the forgotten aging-cellar of a refined multi-sensorial and emotional understanding of architecture.” (Frascari, 2011, p. 8).
the notion that this type of image presents more-than visual phenomena of the embodied aesthetic experience of architecture.\footnote{As Frascari explains, it is precisely this type of synaesthetic perception that already takes place during the creative conception of the architectural design itself (Frascari, 2003; see also Frascari, 2011, pp. 26-28). In a passage echoic of Merleau-Ponty, Frascari describes “the real architectural drawing” as that which “summons insight by allowing the invisible to saturate the visible, but without any attempt or claim of reducing the invisible to the visible lines of drawing.” (Frascari, 2007, p. 7).} It is this last path that I believe has the potential to take us furthest. Such images present an “ensemble of inclinations” and need not be understood as simply “visual nor necessarily pictorial” (Leatherbarrow, 2000, p. 66). “Indeed, the image is not only visual: it is also musical, poetic, even tactile, olfactory or gustatory, kinetic, and so on” (Nancy, 2005, p. 4). These synaesthetic images work through a logic of “sensible resemblance,” affecting us directly by “aesthetic analogy” (Deleuze, 2011 [1981], p. 81).

This is not a type of visual analogy that may be achieved simply by resemblance or similarity – as is the case with photography, where the resemblance remains only “figurative” (Deleuze, 2011 [1981], p. 81). Rather, “sensible resemblance” is another species of analogy where “in the absence of any code, the relations to be reproduced are instead produced directly by completely different relations, creating a resemblance through nonresembling means” (Deleuze, 2011 [1981], p. 81): just as “words do not look like the things they designate” (Merleau-Ponty, 1964, p. 17) any more than a “scream […] resembles what it signals” (Deleuze, 2011 [1981], p. 80), synaesthetic images show sensation (Deleuze, 2011 [1981], p. 60).

Understood thus, synaesthetic images need not have any visual resemblance to the referent, nor attempt to represent or symbolise anything other than itself. These images present a feeling that is analogous to the feeling of the architectural encounter. “What touches is something that is borne to the surface from out of an intimacy” (Nancy, 2005, p. 4). This “intimate” force, continues Nancy, “is not ‘represented’ by the image, but the image is it, the image activates it, draws it and withdraws it, extracts it by withholding it, and it is with this force that the image touches us.” (Nancy, 2005, p. 5).

Frascari uses the drawings of Carlo Scarpa as an exemplar of synaesthetic images of architecture: “the colours used in his drawings were not to suit a process of material identification or to have pseudo-effects of tri-dimensionality, but, to make architectural ideas visible, tainted with non-visible phenomena and tinted with meanings.” (Frascari, 2003). Architects have employed synaesthetic images in the design work in order to improve their own creative process, the communication of multisensory ideas, or as the
promotional image that encourages imaginative interpretation and anticipation by the reader, launching a
desire to experience the architecture *first hand*.

These include the densely layered images of Perry Kulper, the playful compositions of Peter Cook, Peter
Zumthor’s ‘scruffy’ charcoal sketches, the colourful pencil sketches of Raimund Abraham, and the water
colour renders of Steven Holl. There is no consistent style or approach here, simply intent and effect. The
images by Holl and Zumthor are particularly revealing in this regard – few would revere these images for
their technical accuracy or complexity, in fact often they appear downright crude and naive – but it is
precisely this childlike transcription of sensation that appeals.384

Merleau-Ponty observes how a “child's drawing [is...] a series of expressive operations which seek, without
any guarantee, to recover the being of the world” (Merleau-Ponty, 1973 [1969], p. 151). A child does not
start creating visual representations as two-point perspectival images, but rather, goes through certain
developmental stages before this representational skill is learnt. Merleau-Ponty stresses, however, that this
is not a natural progression or evolution, but a product of sociocultural conditioning385 – perpetuating the
“objectivist illusion” that the perspectival drawing is already there, waiting to be discovered (Merleau-
Ponty, 1973 [1969], p. 148). Synaesthetic images, however, put us in touch with the “secret substance” of
the world. On this, Merleau-Ponty is most insightful, and warrants quoting in full:

> The point is that the aim is no longer to construct an "objective" emblem of the spectacle or to
> communicate with whoever looks at the drawing by providing him with the key to the numerical
> relations true for any and all perceptions of the object. The aim is to leave on the paper a trace of
> our contact with this object and this spectacle, insofar as they made our gaze and virtually our
> touch, our ears, our feeling of risk or of destiny or of freedom vibrate. It is a question of leaving a
> testimony and not any more of providing information. The drawing is no longer to be read the way
> it was until recently. It is not to be dominated by the look. We are no longer to find in it the
> pleasure of embracing the world. The drawing is to be received. It will concern us like some decisive
> word. It will arouse in us the profound schema which has settled us in our body and through the
> body in the world. It will bear the mark of our finitude and thereby, and by means of that very
> finitude, it will lead us to the secret substance of the object of which previously we possessed only
> the envelope. (Merleau-Ponty, 1973 [1969], p. 150)

384 See Chapter Five
385 “two-dimensional perspective is not a form of realism. It is a construction” (Merleau-Ponty, 1973 [1969], p. 149). He reminds us that “Cezanne abandons two-dimensional perspective for a whole period of his career because he seeks expression through color.” (Merleau-Ponty, 1973 [1969], p. 152)
In summary a haptic image is an erotic image which launches a desire to not only see more, but to hear, smell, taste and feel more (Sontag, 2003 [1964]): an image that presents (rather than represents) a total experience that is aesthetically analogous to the phenomenologically embodied experience of the architecture itself: “a nexus of living meanings” that moves or touches us (Merleau-Ponty, 2005 [1945], p. 175).
Chapter Four: Affective architecture

Figure 30 – Festive Atmosphere of Anticipation: sunrise in Covent Garden a few days before Christmas. London, UK (2012)
Source: author
You employ stone, wood and concrete, and with these materials you build houses and palaces. That is construction [...] But suddenly you touch my heart, you do me good, I am happy and I say: ‘This is beautiful.’ That is Architecture. My house is practical. I thank you, as I might thank Railway engineers, or the Telephone service. You have not touched my heart. But suppose that walls rise towards heaven in such a way that I am moved [...] you have established certain relationships which have aroused my emotions.

This is Architecture.

Le Corbusier, *Towards a New Architecture*
For Le Corbusier, architecture “is a phenomenon of the emotions,” and thus, “the purpose of [...] architecture is TO MOVE US.” (Corbusier, 1986, p. 19). Indeed, when we talk of a touching or moving architectural experience, “what touches, what we’re touched by, is in the order of emotion.” (Nancy, 2008a, p. 135). This emotional or affective feeling that we experience in particular places and situations is sensed “by means of the felt body [in] a holistic exchange of corporeal dynamics.” (Schmitz, et al., 2011, p. 244). This, I argue, is evinced in the way that our felt body (Leib) empathetically and synaesthetically perceives atmospheres.

In the previous chapter, I explained how we feel our surroundings in a multisensory and cross-modal manner: “in a total way with [our] whole being” (Merleau-Ponty, 1964 [1948], p. 50) and as a “single [...] sensorium commune” (Herder, 1969 [1772], p. 147). The correlative of this touching encounter – how we feel our environment – is how our environment makes us feel. Which is to say, how we are touched by our architectural encounters. In this chapter I contend that what we are experiencing during these affective encounters is a felt phenomenon that proponents of the New Phenomenology (Neue Phänomenologie) are calling “atmosphere” (Schmitz, 2002).

Our empathetic sensibility is essential in this regard, as it attunes us to the particular atmosphere of a space. It is, however, only one contributing element of this atmospheric sensation and not the sensation itself. Other “atmospheric generators” (Böhme, 2014c) include numerous phenomenal qualities (material and immaterial) that populate our sensorial environment, as well as the sociocultural, political or religious context in which the experience unfolds. I present this thesis in three moves:

1) The concept of empathy is introduced and discussed in terms of its affective architectural potential. This task was initially undertaken in the nineteenth century in terms of Einfühlung, and has recently been revived by a number of architectural thinkers following recent discoveries in neuroscience (such as the mirror-neuron-system, or MNS) that are producing promising new insights into the nature of environmental perception. I explore the veracity of these claims and their architectural implications, before concluding that there is more to our empathetic perception of architecture than pre-reflexive, pre-programmed mimicry.

2) Instead I propose an alternative theory: that Einfühlung or our mimetic faculty, is but one factor that contributes to the overall feel of a place or its atmosphere. In order to better elucidate this proposition, I propose another contributing factor that concerns the “narrative” or “hermeneutical background” of the object, person or place (S. Gallagher, 2011). In particular, I argue that this is the

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386 See also “sensus communis” in Aristotle (1907). For more on Aristotle’s use of common sense, see Böhme (2010a, 2013d, 2013e) and in particular, Gregoric (2007)
387 “in the multiple sense of being affected” (R. Tallis, 2003, p. 31). See Chapter Two
388 (Heidegger, 1995 [1983]; Pérez-Gómez, 2016; Ratcliffe, 2002)
ontological function of traces, and that these traces positively contribute to our sense of time, belonging, and character (Brand, 2017).

3) From here, I return to the notion of atmosphere and its relationship to architecture and embodied perception. It has been suggested that atmosphere is what defines architecture (Wigley 1998), and today there is much literature on this topic. Yet despite this sudden saturation, unequivocal responses to many key questions currently inhibit the concept of atmospheres from being properly understood as an important architectural consideration. These include: what is atmosphere; how is it perceived or experienced; what is its architectural significance? Each of these is addressed in turn within the framework of a felt-phenomenology in order to develop a better understanding and greater appreciation for our touching architectural encounters.

This chapter concludes by recognising the reciprocal and participatory relationship that exists between atmospheric affect and our phenomenological bodies, each touching and being touched by the other. It is through this felt reciprocity that we remain always in touch with our world and our world with us.

In rooms with low ceilings our whole body feels the sensation of weight and pressure. Walls that have become crooked with age offend our basic sense of physical stability. The perception of exterior limits to a form can combine in some obscure way with the sensation of my own physical boundaries, which I feel on, or rather with, my own skin. Even the muscular movements of the eyes (or head) induce movements in other organs, especially in the tactile organs [...] The whole body is involved; the entire physical being is moved. (R. Vischer, 1994 [1873], pp. 98-99)

In this single passage, the nineteenth century philosopher, Robert Vischer, asserts that our perception of architecture is fundamentally embodied, affecting how we feel and act: that we perceive with our bodies and what we perceive is felt on and in our bodies. Vischer’s proclamation is indicative of a new wave of aesthetic philosophy that – following the sensory absolution of Kant – drew upon the latest research from psychophysiology for support.390

Vischer is often credited with being the first to introduce the term Einfühlung to aesthetic theory,391 in order to help elucidate the phenomenon of animism – our natural inclination to enliven the environment.

390 Such as those of Karl von Köstlin, Wilhelm Wundt, Hermann Lotze, C. Wilhelm Völker, Johannes Immanuel Volkelt, Hermann von Helmholtz, Carl Stumpf, and Gustav Fechner. For a discussion on how these thinkers influenced aesthetic thought and architecture, see in particular Mallgrave (2013a); Mallgrave and Ikonomou (1994b); Pinotti (2012); Wagner (2014 [2009]); Wagner and Cepl (2014)

391 (Edwards, 2013; Mallgrave, 2013a; Mallgrave & Ikonomou, 1994a)

The etymology of *Einfühlung* (literally, “in-feeling”) predates Vischer’s usage and may be traced to *fühlen* (“to feel”), from the stem *falma* (palm) and the Old High German *folma* (flat of the hand) (Grimm & Grimm, 1854). Vischer’s notion of *shared or in-feeling* is also not new, and may be understood as part of the continuing development of German aesthetics, inherited from both his father, Friedrich Theodor Vischer, and his doctoral supervisor, Karl Köstlin. Some have suggested that the concept actually dated back a century earlier to Herder, when he says that in addition to “self-feeling” we also possess “our other-feeling of others” that enables us to “feel into others” (Herder, 2002 [1778]-a, p. 214).

Vischer’s contribution was to employ *Einfühlung* as a noun in order to explicate these ideas of empathetic perception within the field of aesthetics (Stueber, 2006). Drawing on contemporary theories of dream interpretation – “[where] it was shown how the body, in responding to certain stimuli in dreams, objectifies itself in spatial forms” – Vischer posited that our compulsion to perceive certain forms (in waking life) as having or expressing a particular feeling is the consequence of our own self-projection, and “from this I derived the notion that I call ‘empathy’ [Einfühlung].” (R. Vischer, 1994 [1873], p. 92).

Although *Einfühlung* was coined within aesthetic theory, by the end the nineteenth century it was being employed within the fields of philosophy (theory of mind) and psychology – popularised in particular,

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392 Friedrich Vischer suggests that he was already working on the idea of in-feeling when he wrote his *Asthetiks* (1846): “I discuss how the observer is able to see his own emotional moods and passions reflected in natural phenomena and atmospheric movements,” by actively projecting ourselves and our moods “onto and into existential forms which in themselves have nothing to do with it.” (F. T. Vischer, 1914 [1887], p. 432)

393 In his own *Aesthetik*, Köstlin observed that we are able “to find everywhere resemblances between external things and [our] own mental states, experiences, sensations [Empfingungen], moods, emotions, and passions.” (Köstlin, 1869, p. 325)

394 For Herder also, this faculty is not limited to our perception of other Dasein, but extends to “everything that we call dead nature [...]because the sensing human being feels his way into everything, feels everything from out of himself, and imprints it with his image, his impress.” (Herder, 2002 [1778]-a, pp. 187-188). For more on Herder’s conception of empathy, see Edwards (2013); and M. N. Forster (2002)

395 In particular the psychoanalytical woks of Karl Albert Scherner (Scherner, 1861), whose texts were also of great significance to Sigmund Freud three decades later (Freud, 2013 [1900])

396 The notion of empathy (or “fellow-feeling”) has also been alluded to in moral philosophy of Adam Smith (2006 [1759]) and David Hume (2003 [1739-1740]). Smith, for example, defines “sympathy” as the imaginative capacity with which we place ourselves into the situation of another: “we enter, as it were, into his body, and become in some measure the same person with him, and thence form some idea of his sensations” (A. Smith, 2006 [1759], p. 2). These thinkers are not, however, concerned with applying this concept to aesthetics or architecture, and will therefore, not be examined further here. For more on Smith and fellow-feeling, see (Debes, 2015)

397 Though by this time, the definition of empathy had already undergone considerable deviations from Vischer’s usage. See, for instance, the work of Herman Siebeck (1875, 1906, 1909), Karl Groos (1892, 1902), Johannes Volkelt (1895, 1897, 1905-1914)
by the work of Theodor Lipps (1893-1897, 1906) – whence it was finally translated into English as empathy by Edward Titchener (1909).  

Like Vischer, Lipps was also interested in this inclination to feel into (sich einfühlen) others, such that “every object is, for me, an individual [...] a unified self is felt to be within the object” (Lipps, 1909, p. 196). According to Lipps, to perceive a cloud as threatening, or the trees as melancholic, or the wind as sorrowful, occurs when my imagination breathes life into inanimate forms (Lipps, 1906). The resultant experience is thus of oneself (my breath, my life), or rather, the projection of my own affective disposition reflected within my perception of the object (Lipps, 1909).

Lipps’ use of ‘empathy’ is, however, of questionable currency, as it makes only sporadic appearances throughout his work, with inconsistent definitions and is often employed as a synonym for sympathy (Jahoda, 2005; Stein, 1989). Indeed, Husserl dismisses Lipps’ definition of empathy as a “refuge of phenomenological ignorance” (Husserl, 1973, p. 24). A century of ambivalence and inconsistent usage has since rendered empathy “an almost unusable word” (Gallese, 2015, p. 69) (something that the recent empathic turn has done little to remedy) and it has been suggested that there are now “probably as many definitions of empathy as there are people working on the topic” (De Vignemont & Singer, 2006, p. 435). Consequently, the architectural implications of empathy aesthetics have failed to be fully realised. The reasons for this are numerous: firstly, many of the nineteenth century authors were dealing with ideas borrowed from unfamiliar fields, or were attempting to promote new ideas for which no suitable words existed, necessitating a flurry of neologisms (most of which simply compounded the matter further). This

398 “Not only do I see gravity and modesty and pride and courtesy and stateliness, but I feel or act them in the mind’s muscles. This is, I suppose, a simple case of empathy, if we may coin that term as a rendering of Einfühlung; there is nothing curious or idiosyncratic about it; but it is a fact that must be mentioned.” (Titchener, 1910, pp. 21-22). Titchener was also first to translate haptic as haptic (Titchener, 1901).

399 More recently, Dan Zahavi has argued convincingly that Lipps’ account of empathy is more akin to explaining emotional contagion, since the object of the experience that Lipps is concerned with is not that of an other, but of himself (how he feels) (Zahavi, 2010, p. 291). For more in Lipps theory of empathy, see (Greiger, 1911)

400 Even within philosophy of mind literature, one may find an attempt to differentiate between “mirror” empathy, “cognitive” empathy, “reenactive” empathy, “motor” empathy, “affective” empathy, and “perceptually mediated” empathy, to name but a few (Zahavi & Michael, 2016).

401 Including Anfühlung, Ausfühlung, Ineinsfühlung, Nachfühlung, Zufühlung, Zusammenfühlung (R. Vischer, 1994 [1873]), Nachfühlen (reproduction of feeling), Nachleben (reproduction of experience), Nacherleben (visualising of experience), Verstehen (understanding), and Fremdwahrnehmung (perception of minds) (Scheler, 2008 [1923]). See also Mallgrave and Ikonomou (1994a, p. 22)
has proven a fairly prohibitive challenge to would-be translators, resulting in few works becoming available to an Anglophone audience (Mallgrave & Ikonomou, 1994b, ix-x).\footnote{To date English translations of Baumgarten, Zimmermann, and other prominent Austro-German thinkers remain unrealised. Even those of August Schmarsow, Friedrich Theodor Vischer, or even Heinrich Wölfflin, remain scarce (with the notable exception provided by Mallgrave and Ikonomou (1994b)).}

It has also been suggested that the fall of interest in empathy studies coincided with the outbreak of the First World War, and the subsequent collapse of German and European academic culture (Pallasmaa, et al., 2015, p. 81).\footnote{Another unfortunate consequence of the war in Europe was that many works, like those of Schmarsow, were inadvertently destroyed (Mallgrave & Ikonomou, 1994a, p. 2).}

Another reason why empathy was so easily overlooked is because it lacked the proper empirical grounding or scientific rigour so precious to early twentieth century audiences; a fact not lost on Vischer, who laments that the “physiological knowledge” available to him is inadequate to properly explicate the phenomenon of \textit{Einfühlung} (R. Vischer, 1994 [1873], p. 92). He maintained, however, that despite this shortcoming it remained a subject “worthy of being carried forward and completed by the sure hand of a specialist in this field.” (R. Vischer, 1994 [1873], p. 92).

It would be a century later before this “sure hand” would arrive in the form of neuroscience – discovering (among other things) the “mirror neuron system”\footnote{(Gallese, Fadiga, Fogassi, & Rizzolatti, 1996; Rizzolatti, et al., 1996)} – and another decade still before Semir Zeki introduced the term “neuroaesthetics” (Zeki, 1999; Zeki & Nash, 1999) to name the nascent field of research within cognitive neuroscience, concerned specifically with the biological substructures of aesthetic perception.

This has generated something of a return to empathy aesthetics;\footnote{(Gallese, 2011; Huston, et al., 2015; Lauring, 2014; Onians, 2007; Ratcliffe, 2009a; Rose & Abi-Rached, 2013)} attracting the attention of architects, for whom the question of how we perceive and experience different spaces – how we are moved or touched by our architectural encounters – is of the utmost importance. This empathic turn promises to significantly revise how our built spaces are designed and understood.\footnote{(Malgrave, 2011, 2013a; Pallasmaa, et al., 2013; Pallasmaa, et al., 2015; Robinson & Pallasmaa, 2015; Wagner, 2014 [2009])} So what was it that neuroscience discovered and how does it relate to \textit{Einfühlung}?

Two decades ago, Giacomo Rizzolatti and a team of Italian scientists in Parma discovered a group of visuomotor neurons in the premotor (F5) areas of the brain, that have the capacity – through purely visual observation – to record, interpret, and repeat the actions of those performed by the observed (Gallese, et al., 1996; Rizzolatti, et al., 1996).
Originally discovered by accident in studies on macaque monkeys, these so-called mirror neurons have since been confirmed in humans, and in even greater numbers (Pellegrino, Fadiga, Fogassi, Gallese, & Rizzolatti, 1992). These neurons are incited by the recognition of both (goal-directed) actions and expressions of affective states (Freedberg & Gallese, 2007; Gallese, 2011, 2015).

This suggests that the neurological processes that map our actions, emotions and sensations are also activated when we experience similar actions, emotions and sensations produced by others (Gallese, 2009, p. 520). Moreover, activation of the MNS is somatotopically organised, meaning that there are particular areas of activation in the brain (areas responsible for planning movements and spatial reasoning) that correlate to the particular body-part involved in the observed action (such as the hand or mouth).

Neuroscientist, Antonio Damasio describes this mimetic sensation in terms of an ‘as-if body loop’, whereby the observer experiences “the simulation, in the brain’s body maps, of a body state that is not actually taking place in the organism” (Damasio & Damasio, 2006, p. 19) – we experience the action we see as-if our own body was involved: “The cortical motor network is activated [...] but action is not produced, it is only simulated” (Gallese, 2011, p. 457). This mechanism is known as “embodied simulation”. Hence, its empathetic appeal: “Embodied simulation not only connects us to others, it connects us to our world – a world inhabited by natural and manmade objects [...] as well as other individuals” (Gallese, 2015, p. 75).

Vittorio Gallese’s Simulation Theory (S.T.) posits that the feeling we have during an emotional experience is inseparable from the embodied expression of that emotion or, rather, that what we feel is the emotion and an embodied expression simultaneously. Indeed, we now know that “feelings and emotions are the body murmuring to the mind (Hayles 1999, 245) and, in this respect, they are “just as cognitive as other percepts.” (Damasio, 1994, xv). Understood thusly, both emotions and empathic perception constitute a haptic or felt-phenomenon, insofar as they comprise an inseparable corporeal component (Griffero, 2014b; Schmitz, et al., 2011).

Every emotion may be said to have an inner impression and an outer expression, which together form an “expressive unity” [“Ausdruckseinheit”] (Scheler, 2008 [1923], p. 262). This happens, explains Hermann Schmitz, with a surprising reliability of gestures and choreographed expressions:

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407 (Freedberg & Gallese, 2007; Gallese, 2011, 2015; Gallese & Gattara, 2015)
408 So Wölfflin was correct in stating that “Every mood has its definite expression that regularly accompanies it,” but wrong in suggesting that “expression is [...] the physical manifestation of the mental process” (Wölfflin, 1929 [1915], p. 155).
409 The inseparable nature of our inner and outer states has been recognised since Aristotle, who posited that “all affections of the soul involve the body – passion, gentleness, fear, pity, courage, joy, loving, and hating; in all these is a concurrent affection of the body” (Aristotle, 1951e: Bk.1, pt.1)
410 Founder of the New Phenomenology. See Schmitz (2002)
A person in distress will spontaneously sigh and assume a hunched and limp posture; a person feeling shame will automatically cast their eyes downward; an angry person will clench their fist and speak in an irritable, even a sharp voice; a happy person naturally shows complex expressive behaviour – a light springy step, laughing eyes, an inclination to smile, breathing freely, articulating jauntily. (Schmitz, et al., 2011, p. 245)411

Figure 32 - Stimulating Emotions: French neurologist Guillaume-Benjamin-Armand Duchenne de Boulogne using electric currents to stimulate the face in order to recreate emotional expressions. Photographed by Adrien Tournachon. (1854-56)
Source: MET (http://www.metmuseum.org/search-results#!/search?q=Adrien%20Tournachon)

411 See also Alberti: “We see how the melancholy, preoccupied with cares and beset by grief, lack all vitality of feeling and action, and remain sluggish, their limbs unsteady and drained of colour. In those who mourn, the brow is weighed down, the neck bent, and every part of their body droops as though weary and past care. But in those who are angry, their passions aflame with ire, face and eyes become swollen and red, and the movements of all their limbs are violent and agitated according to the fury of their wrath. Yet when we are happy and gay, our movements are free and pleasing in their inflexions.” (Alberti, 1972, p. 81)
In fact, it appears that certain “basic emotions” (happiness, sadness, fear, anger and disgust) are accompanied by genetically determined “affect programs” that are responsible for causing changes in brain activity, physical expression (facial and bodily), behaviour, and physiology (automated systems that regulate heartrate, tears, salivation, and sweat) (Colombetti, 2014; Damasio, 1994, 2003). It is by virtue of these outward expressions that we are able to perceive the affective states of others – this is the first component of what Lipps called, the “Einfühlung-instinct” (Lipps, 1907, p. 713). But we also require the second component – inner imitation – in order for us to understand these states.

Lipps posited that when we see the outward expression of another’s affective state, we are predisposed to imitate, or mirror it (Lipps, 1907, p. 719; 1909, pp. 229-230). In doing so, the associated inner sensations (mapped in the relevant parts of the brain) are evoked. This is most noticeable with the perception of facial expressions (Ekman, 1992).

412 “the premotor/prefrontal cortex (in the case of compassion), the anterior insular cortex (in the case of disgust), and the amygdala (in the case of fear)” (Damasio & Damasio, 2006, p. 19)
413 The particularities of the process of emotional transposition remain uncertain – and we would be right to question the credibility of statements or explanations that suggest otherwise. Scott Vrecko has compiled a list of the range of ideas that some authors have claimed a neurological basis for. These include: altruism, criminal behaviour, empathy, fear, hope, love, neuroticism, obesity, racial bias, suicide, trust, wisdom, and (religious) zeal (Vrecko, 2010). It would therefore, be wise to remain suspicious of spurious sounding claims, like the discovery of “the brain’s centre of wisdom” (Leake, 2009), or “the neural basis of unconditional love” (Beauregard, Courtemanche, Paquette, & St-Pierre, 2009).
According to S.T. then, when we perceive affective expressions in others, an automatic, unconscious, prereflexive and prelinguistic process is activated, which causes us simultaneously to experience the feelings we perceive.\textsuperscript{414} So how does S.T. explain our emotional response to architecture and art?

A ‘historia’ will move spectators when the men painted in the picture outwardly demonstrate their own feelings as clearly as possible [...] we mourn with the mourners, laugh with those who laugh, and grieve with the grief-stricken. Yet these feelings are known from movements of the body.” (Alberti, 1972, p. 81)

For Alberti, the ‘historia’ (in Latin, or ‘istoria’ in Italian) was a term reserved for only the most powerfully evocative works of art, those that found resonance in “the eye of the learned and unlearned spectator” alike, provoking a deep emotional response (Alberti, 1972, p. 79).\textsuperscript{415} S.T. suggests that this process of embodied simulation can be applied to the perception of images, such as a photograph or painting, that depicts a body (or body part) engaged in a recognisable action of some sort.\textsuperscript{416} When beholding William Bouguereau’s painting \textit{Dante and Virgile}, for instance, we may experience sensations of fretfulness or shock – both from the disturbing nature of the scene and from Dante’s own expression. But we may also experience something akin to Berenson’s ideated sensations (Berenson, 1907 [1896]): a physical discomfort in the small of our back (where Gianni Schicchi forcefully strikes the heretic, Capocchino), or in our ribs and neck (where Schicchi appears to slice into the flesh of his victim with his nails and teeth).

The muscular naked bodies of the two central figures are also tensed and strained in rage and agony. Not only may we correctly assign these feelings to the figures depicted, but we may also experience a slight tensing and tightening in our own bodies (Mallgrave, 2015b). In the case of figurative artworks, it may not be so surprising that our empathetic perception extends from the perception of others to images of others. But what of plants, inanimate objects or buildings?

\textsuperscript{414} Elsewhere, mirror neuron research has also confirmed that those with cognitive learning difficulties – such as Asperger’s syndrome or autism (and others who have difficulty in recognising and responding to the emotional expressions, including facial expressions) – have different mirror neuron responses, suggesting that they do not undergo this simulation of embodied empathy (Lundborg, 2014; Nadel, 2002; Zahavi, 2014)

\textsuperscript{415} See also Grafton (1999)

\textsuperscript{416} (Freedberg & Gallese, 2007; Gallese, 2011; Keysers & Gazzola, 2009; Keyser et al., 2004)
A cliff appears to stand at attention and squarely face us; we therefore read spiritual defiance into it. Its projecting angle seems to lunge out as if affected by a passion (impatience, curiosity, anger); it appears ‘to step forward.’ In the branches of a tree we spread our arms longingly, and so on. We may go further: the suggestive facial expression is inwardly carried out or repeated. The static form is empathetically felt. (R. Vischer, 1994 [1873], p. 105)\(^{417}\)

\(^{417}\) See also Köstlin (1869, p. 397). Another nice example of this animism is also offered by Peake: “To Titus they seemed curiously alive, these copses [...] There were the trees that huddled together as though they were cold or in fear. There were trees that gesticulated. There were those that seemed to support one of their number who appeared wounded. There were the arrogant groups, and the mournful, with their heads bowed: the exultant copses and those where every tree appeared asleep. The landscape was alive, but so was Titus. They were only trees, after all: branches, roots and leaves.” (Peake, 1999 [1946], p. 446)
They are, of course, only rocks and trees — and yet, as Vischer observes, “we seem to perceive hints and traces of attitudes, of emotions — a secret, scarcely suppressed twitching of the limbs, a timorous yearning, a gesturing, and a stammering. These signs are instantly translated into their corresponding human meaning” (R. Vischer, 1994 [1873], p. 105).

Vischer’s thesis, however, presents a somewhat muddled combination of formalism and sensualism that typified aesthetic theory at that time (Mundt, 1959). With reference to the studies of Wilhelm Wundt (1863, p. 158), Vischer suggests that an affective response is generated by the lines and contours which our eyes follow during visual observation and discernment. Accordingly, the pleasure or displeasure we feel when looking at something depends on the strain that this act of looking puts on the extraocular muscles: straight lines at oblique angles or zig-zag lines cause our eyes to make sudden, sporadic movements which induces discomfort and irritation. Conversely, continuous horizontal lines or gentle sweeping curves are agreeable and relaxing to the beholder (R. Vischer, 1994 [1873]). Even a circle or sphere “has an immediately pleasing effect because it conforms to the rounded shape of the eye.” (R. Vischer, 1994 [1873], p. 97).

Wölfflin is also familiar with the “widely held thesis” that “the emotional tone of a form is explained by the kinaesthetic response of the eye” (Wölfflin, 1994 [1886], p. 150). Contrary to Vischer, however, Wölfflin affirms that such thinking is fallacious. Citing Lotze’s physiological experiments (Lotze, 1868, pp. 310-311), Wölfflin explains that extraocular exercise has little to do with the pleasure or displeasure we take from visual perception; in practice, it is only the intensity of light that may directly be visually experienced as comforting or discomforting. Wölfflin objects to the notion that the sensory stimuli need bear any formal resemblance to the perceiving organ; a point he illustrates by explaining that what we feel when we are moved by a musical composition is in no way based on the relationship between the qualities of the sound and the form of our ears (Wölfflin, 1994 [1886], p. 151).

In addition to the influence of oculomotor movements, Vischer’s thesis was also inspired by the psychoanalytical process of dream interpretation (Köstlin, 1869). According to Vischer, when we dream, parts of our body “are imitated by analogies to their shape (usually on an enlarged scale) with the help of

418 “Indeed, we cannot even grant this factor a secondary role” (Wölfflin, 1994 [1886], p. 151)
419 More recently, the Swiss architects, Gilles Decosterd and Philippe Rahm, have taken these same ideas a step further in their installation Melatonin Room (2001). The architects installed a wall of light boxes with a combined intensity of over 10,000 lux, capable of supressing the release of melatonin within five minutes of exposure, thus increasing a state of alertness and performance (Decosterd, Rahm, & Betsky, 2002, pp. 147-152). Technically, the effect is entirely “non-visual” as the suprachiasmatic nucleus (SNC) of the hypothalamus (which tells the pineal gland whether it’s day or night, and thence controls the release of melatonin) is not affected by changes in colour, shape or movement. See also the architects’ Hormonorium project, http://www.philipperahm.com/data/projects/hormonorium/index.html.
an object only remotely similar.” (R. Vischer, 1994 [1873], p. 100). Vischer contends that this same faculty is active during waking life as regards our natural perception of objects:

\[\ldots\] the compressed or upward striving, the bent or broken impression of an object fills us with a corresponding mental feeling of oppression, depression, or aspiration, a submissive or shattered state of mind. We wish to call this lingering, motionless empathy with the static form of the phenomenon physiognomic or emotional. (R. Vischer, 1994 [1873], pp. 104-105)

It is in this way that we “project and incorporate our own physical form into an objective form” (R. Vischer, 1994 [1873], p. 104). This mimetic response to corporeal analogy was more acceptable to Wölfflin, who affirmed that “physical forms possess a character only because we ourselves possess a body.” (Wölfflin, 1929 [1915], p. 151). Wölfflin explains that the extent to which we experience an empathetic transference in the animism of form is dependent on the sensitivity of the beholder (their impressionability) and the visible characteristics available (the affordance of visual similarity).

This is not to say that a building need have two upper and lower extremities in order to offer the idea of our own bodily form. It may simply be a similarity of compositional properties, such as symmetry, verticality (including a distinct sense of front, back, left, right, up and down), regularity, proportion and harmony (F. T. Vischer, 1914 [1887]).

Although some have argued that we cannot empathise with inanimate objects because they are insensitive (not sentient) and do not have a soul with which to empathise (Husserl, 2000 [1952], p. 102), Vischer maintains that it is because they are soulless that we are inclined to animate them: “Where there is no life – precisely there do I miss it […] and precisely because we miss it, we imagine the dead form as living” (R. Vischer, 1994 [1873], p. 104). Moreover, a structure or image that lacks these properties, is not seen as simply dissimilar from our bodies, but rather as similar to a deformed body.

The effect of asymmetry, for instance, “gives us physical discomfort […] as if our own body was disturbed or a limb were mutilated.” (Wölfflin, 1994 [1886], p. 164). Anthony Vidler has argued similarly that when we apprehend the shattered or distorted architectural geometries (such as those of Coop Himmelblau, Bernard

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420 “I might dream of a dangerously overhanging oriel of a house, for instance, because my head is hanging down over the side of the bed.” (R. Vischer, 1994 [1873], p. 100)

421 Although there is a tendency at least to interpret the façade of a building as just that, a face: “Even though a house has little in common with a human form, we see windows as organs that are similar to eyes […] The portion above the window becomes the forehead. Cheerfulness demands a smooth brow.” (Wölfflin, 1994 [1886], p. 176). See also Vidler (1990; 1994, pp. 85-99)

422 See in particular, Pérez-Gómez (1987, 2011); Sennett (1996); Wagner (2014 [2009])

423 So strongly was Wölfflin’s apparent belief in this idea of bodily projection that he goes on to claim a relationship between somatotype and architectural preference: “that thin people, constantly on the move, generally prefer slender proportions, while strong, stocky people select the opposite.” (Wölfflin, 1994 [1886], p. 169).
Tschumi, or Daniel Libeskind), we feel “threatened, as the reciprocal distortions and absences which are felt in response to the reflected projection of bodily empathy operate almost viscerally on the body. We are contorted, racked, cut, wounded, dissected and intestinally revealed, impaled and immolated” (Vidler, 1990, p. 7).

Often these metaphors are not only afforded but encouraged by the architects, in a slightly desperate attempt to humanise an otherwise rather bland or impersonal design – or even just to throw the viewer off a more likely (and less preferable) simile. The design for the BLC Headquarters in Beirut by Atelier Hapsitus is one such example. Contrary to “the hermetic and alienating facades that often characterise large corporations” the proposed design is “an unconscious gesture” that “strives to reflect the history of the bank and project its future with a design strategy that responds intuitively to the site.” (Mills, 2010)

Figure 36 shows a series of promotional images provided by the architects demonstrating how “the different expressions of old and new become complementary, working together in symbiosis” (Mills, 2010). The photograph of the child offers a weak allusion to play while the crude sketch of the two anthropomorphised buildings supporting each other suggests a paternal relationship. Both are perhaps

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424 See Chapter Three
presented as an attempt to divert the viewer from the more obvious image of a decapitated body squatting over the existing structure.

And thus, “the apparent difficulty that it [Einfühlung] cannot be applied to vegetable and animal personifications is easily overcome by the inference of a metaphor” (R. Vischer, 1994 [1873], p. 105).

This anthropomorphic compulsion also found support from the humanist architect Geoffrey Scott, who argued that it was not only the “natural way of perceiving and interpreting what we see,” but also “the foundation of architecture” (Scott, 1914, pp. 217, 218). Scott maintains that the strongest examples of empathetic architecture come from antiquity, whose “method [it was] to transcribe in the stone the body’s favourable states,” including “power and laughter, strength and terror and calm.” (Scott, 1914, p. 261).

At first glance, this line of thinking appears fairly cogent – we know for instance, that early units of measurement employed in construction were taken from the body itself (such as the cubit, the ell, the fathom, the foot, the inch, the hand and so on (R. Tallis, 2003, p. 210)) – a fact that is oft traced back to the writings of Vitruvius, and his corporeal description of the origin of columnar ratios and the classical orders of architecture (Vitruvius, 1914 [25BC], pp. 103-104).

425 A notion further developed by Benjamin when he speaks of the “mimetic faculty”: “the very greatest capacity for the generation of similarities” (W. Benjamin, 1999 [1933]-a, p. 694). According to Benjamin, this “gift we possess for seeing similarity is nothing but a feeble vestige of the formerly powerful compulsion to be similar and to behave mimetically” (W. Benjamin, 1999 [1933]-d, p. 691). See also Scott (1914, p. 217).

426 The male body was allied with Doric column, the female with the ionic: the former “borrowed manly beauty, naked and unadorned,” while the latter mirrored “the delicacy, adornment, and proportions characteristic of women.” (Vitruvius, 1914 [25BC], p. 104). This tradition of extrapolating bodily proportions for design elements is evident also in the texts of Alberti (Alberti, 1988), Francesco di Giorgio, and Leonardo da Vinci (for a comprehensive account, see Rykwert, 1999 [1996]). The body image has survived well into the twentieth century, most notably perhaps through the work and writings of Le Corbusier and his Modulor (2004 [1954], 2004 [1955]). The relationship between the design of the human body and that of architecture is an inexhaustible source of interest and intrigue, and so for the sake of concision, will not be discussed further here. For more on this topic, see in particular, Casey (2001b); Dodds   

Figure 36 - Humanising Architecture: design for BLC Headquarters by Atelier Hapsitus  
Source: Dezeen (Mills, 2010)
And certainly, when one considers the “petrified bodies” of the caryatids (Payne, 2002, p. 96) – such as the six female figures who carry the porch of the Erechtheion (421-405 B.C.) – we can understand how some thinkers, like John Onians, may reason that the ancient inhabitants “could not look at a column without experiencing this vital assimilation” between the human and architectonic form (Onians, 2002, p. 54).

I believe, however, that this is a rather spurious line of reasoning – one that threatens to derail our elucidation of empathetic architectural experiences – and that there is more to empathy than preoetic, preprogrammed mimicry. Consider the following three points:

- Firstly, the propositions by “neuroarthistorians” like Onians, are ultimately unsubstantiatable: current neuroimaging techniques are unable to account for how we perceive our built environments today (nor is there any suggestion that they will be in the future), let alone the perceptual capacities of our ancestors.

- Secondly, research into the MNS has confirmed that we exhibit an irrefutable preference for forms that most resemble bodies (particularly faces (Morton & Johnson, 1991)), and specifically those that are most similar to our own (gender, ethnicity, age group). An architectural treatise based on Simulation Theory then, could mistakenly conclude that in order to create an architecture that had the greatest empathetic effect, such as a space that felt happy, its form need only resemble the faces of people expressing happiness. Even if this grotesque thesis were carried out, it would be open to misinterpretation – a smile is not always an expression of happiness (Duchenne smile) or even sincerity (‘Pan Am’ smile). Indeed, a genuinely joyful smile is quite different from one of sarcasm, bemusement, nervousness, submission, gratitude, or relief.

- And finally, while these corporeal allusions may afford our mimetic faculty something to simulate, what happens when we perceive a form as simply another form, which is to say, as something equally inanimate or insentient? We needn’t look too far to find architectural examples: London is now in possession of the ‘Gherkin’ (Foster’s Swiss Re Building), the ‘Cheese-grater’ (Rogers Skirk Harbour + Partners), and the ‘Can of Ham’ (by Foggo Associates). Does a Gherkin feel? Do we feel like a Gherkin?

427 (Chouliaraki, 2006; Losin, Iacoboni, Martin, Cross, & Dapretto, 2012; Maister, Slater, Sanchez-Vives, & Tsakiris, 2015)
428 We know from Chapter Two that a gesture, such as a simple handshake, may carry numerous connotations depending on intention, circumstance, and cultural norms (Bulwer, 1644; Cheiro, 1897; Maranini, 2007)
429 The quips quickly followed: “London is becoming a bizarre dinner party in the sky” (Wainwright, 2013a) and “welcome to the London lunchbox” (Gelbart, 2015). See Chapter One and Jencks metaphoric deconstruction of Gehry’s Guggenheim (2006; 2011, pp. 204-208) and Le Corbusier’s Chapel at Ronchamp (2011, pp. 37-40)
The real issue here is not that architecture can only engage with us empathetically via the visual detour of bodily metaphors, but that simulation theory can no more fully account for how we empathise with others than empathy itself can account for all the ways we are touched or moved by our architectural encounters. This should already be apparent by the fact that even when a building affords no possibility of anthropomorphism (or appears to resemble another inanimate object), it would be wrong to claim that such structures are apathetic – that they are emotionally impoverished, or that we feel unmoved or indifferent in our apperception of them.430

In point of fact, there are a great many buildings and built spaces that are incredibly emotive and seemingly saturated with feeling, while lacking any obvious anatomical analogy: architecture in which great deeds or atrocities took place; in which cultural, historical or religious icons lived and worked; great arenas where sporting or musical events occur; my own grandmother’s kitchen or my childhood bedroom; ruinous castles and ancient monuments and so on and so forth. If this is empathy, then there is clearly more to it than the primitive animism suggested by S.T.

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430 We are, after all, always feeling something, and as Leatherbarrow – paraphrasing Alfred Whitehead (1978 [1929]) – observes, “a feeling is always a feeling of something” (Leatherbarrow, 2015, p. 94). This concept is discussed further in terms of atmospheric perception in the final section of this chapter.
Retracing character

To say that we are capable of experiencing others, is not to say that we have some sort of unmediated access to their consciousness, that we necessarily know the source of their affective state (the why), or that we are capable of experiencing their affective state as they do. If someone is crying, they are, according to phenomenologist Alfred Schutz, performing an *expressive movement* (Schutz, 1967 [1932], p. 116).

Seeing someone crying, however, is not sufficient basis from which to conclude that they are sad, since crying may be a response to a joyous event, relief, or physical pain. Indeed, they may only be crying because they wish to give the impression or appearance of sadness – what Schutz calls, an *expressive act* (Schutz, 1967 [1932], p. 116).

Simulation Theory alone is incapable of fully explaining the complexity of interpersonal understanding, which involves not only observation of expression but also a creative interpretation of the observer’s personal context (including an understanding of their actions and motivations). This is what Schutz refers to as their “complex of meaning” [*Sinnzusammenhang*](Schutz, 1967 [1932], p. 24).

An alternative theory of empathy (or, the problem of other mindedness) known as “theory‐theory” maintains that our understanding of others is the product of deductive inferences based on contextual cues, clues and past experiences. Hence, our empathic perception of others is not directly felt, but theorised as an affective state distinct from our own.

Such thinking found support in the work fellow phenomenologist, Max Scheler, who illustrates this point with reference to the perception of a blush – the meaning of which cannot be ascertained by either its presence or shade on the cheek of the observed. While I may perceive it as an expression of shame, it may equally be “overheating, anger or debauchery” or simply the result of red lighting (Scheler, 2008 [1923], p. 263). As Edith Stein puts it, “neither [their] motivation nor [our] judgement [...] is expressed by any ‘sensual appearance’.” (Stein, 1989, p. 6).

Moreover, if we are lacking in contextual clues or information, then we have only our own contextual experience and understanding to fall back on. This is an incredibly limiting factor of S.T., since it means that our perception of another is not how we imagine ourselves to act if we were them in their position (with their particular background and biases), but how we imagine we would act if it were happening to us (not them). This is most pronounced when confronted with unfamiliar situations, or others from unfamiliar socio-cultural or religious backgrounds. These beliefs and cultural practices play such a fundamental part in our everyday experiences that any misunderstanding or misattribution is soon made apparent (S. Gallagher, 2012, p. 364).
Simply recognising a gesture or action as the expressive act of a particular emotive state is insufficient in and of itself to elicit the same feelings within us. This was the position of Smith, who maintained that in order to share in the perceived feeling, we first need to have some comprehension of the circumstance in which the expression is taking place.\footnote{In his own example, Smith posits that seeing someone express anger towards another tells us little more than that they are angry – we cannot sympathise with them as we are “unacquainted with their provocation” (A. Smith, 2006 [1759], p. 7). Indeed, we are perhaps more inclined to sympathise with the person on the receiving end of their tirade, since “sympathy [fellow-feeling] does not arise so much from the view of the passion, as from that of the situation which excites it.” (A. Smith, 2006 [1759], p. 6).}

This notion of circumstance or context then is informative, as it implies that what we feel during an empathetic encounter – such as an emotional architectural experience – is more than an embodied simulation of visible forms: it is also the product of our own understanding of the wider context in which our perceptions take place.

More recently, Gallagher has argued that despite the fact that we empathise best with those that appear most similar to us, we are nevertheless capable of empathising with others that do not: with other people from different cultures, with other animals, and even with ‘aliens’ from other worlds (in movies and books, such as E.T. or Wall.E). This ability, Gallagher maintains, is borne from an understanding of context, of their stories: we are able to empathise only “when we frame their behaviour in a narrative that informs us about their history or their situation.” (S. Gallagher, 2012, p. 370).\footnote{Phenomenologically, this goes a long way to explain \textit{why} we empathise more easily with those we are most familiar with (our kin), because we have an understanding of their narratives – we are familiar with their stories – we can better anticipate, recognise, and explain their behaviour, actions, and gestures. (S. Gallagher, 2012; S. Gallagher & Hutto, 2008; Hutto, 2012)}

Gallagher proposes a more phenomenological account of empathy that accepts simulation theory as a necessary but merely primitive aspect of a more complicated process that helps us to fill “a \textit{massive hermeneutical background}” when it comes to understanding and anticipating the feelings and actions of others (S. Gallagher, 2011). Indeed, “narratives seem necessary for empathy [...] they give us access to contexts that are broader than our own contexts and that allow us to understand a broad variety of situations.” (S. Gallagher, 2012, p. 370).

So context matters – but only if we are aware of it. This is illustrated nicely in a description of Kronberg Castle by physicists Niels Bohr and Werner Heisenberg:

\begin{quote}
Isn’t it strange how this castle changes as soon as one imagines that Hamlet lived here? [...] The stones, the green roof with its patina, the wood carvings in the church, constitute the whole castle. None of this should be changed by the fact that Hamlet lived here, and yet it is changed
\end{quote}
completely. Suddenly the walls and the ramparts speak quite a different language. (Heisenberg, 1971, p. 51)

![Erase the Traces: the vacant plot of 16 Wardle Brook Avenue, Hattersley, Cheshire (UK). (previously the site of a house belonging to Ian Brady, in which the murder of five children took place). While it appeared similar to every other house on the street, after the Moors Murders, the local council made the decision to demolish the building as it (and the media attention surrounding it) was distressing local residents. Only the trace of its past presence remains. Source: Wikimedia (https://commons.wikimedia.org/wiki/File:16_wardle_brook_avenue.jpg)](image)

Knowing the ontological history of something alters our perception of it and affords a greater sense of connectedness with its previous users or inhabitants. This has particular value for collectors and archaeologists, for whom “dates, place names, formats, previous owners,” come together “as a harmonious whole” to form a “magic encyclopaedia” of an object’s past (W. Benjamin, 1999 [1931]-c, pp. 489, 487). This is why Benjamin described collectors as “physiognomists of the world of things.” (W. Benjamin, 1999 [1931]-c, p. 487; see also W. Benjamin, 2002, p. 858).

Physiognomists, like graphologists, profess to acquiring knowledge of a person’s inclinations or character from an interpretive reading of their appearance and gestures. Looking beyond formal features, it is possible to construct a narrative history from the impressions made and the traces that are left behind. For Benjamin, this ontological significance was what distinguished an original work of art from a reproduction, since only the original “bears the mark of the history to which the work has been subject.” (W. Benjamin, 2002 [1936]-b, p. 103). 433 This is part of the work of art’s auratic quality concerning its origins and

433 For a discussion on the significance of the trace in Benjamin’s work, see Hansen (2008) and Jauss (1987)
authenticity, which is also perceived empathetically (Baudrillard, 2005 [1968]). As regards architecture, I prefer to use the term character:434

To grasp the expressive character of a building is to feel its significance, to know what its character is like, to feel the inward resonance of an idea or way of life [...] The man who cannot so ‘enter into’ the character of a building [...] will be like the man who is able coldly to attach names to the feelings which he reads in the faces of his fellows, but who has no knowledge [...] To understand expression in art requires [empathy]435 (Scruton, 1979, p. 205)

The word, “character,” comes from the Greek kharax, referring to the tool used for engraving and leaving a mark or impression (kharakter). In common parlance we may say of a person, object or building, that it has character, or that it is characterful. By which we mean that it exhibits certain markings – moments of personalisation from particular encounters – that come together to form a narrative of use and past presences.

And contrariwise, artefacts and architecture that exhibit few discernible traces, appear new, ontologically impoverished, and bereft of such engaging narratives. Compared to old ‘well-worn’ or ‘pre-loved’ shoes, new leather shoes straight from the shop appear crisp, clean, and uniformly smooth, but they “lack the rich, rustling life of the form” (Wölfflin, 1929 [1915], p. 24). Similarly, while two pairs may appear identical, if one has a history that is in some way meaningful to us it will be more revered. For instance, if one pair had previously been worn by a celebrity,436 or was created by a famous designer,437 or had witnessed a famous event,438 the perceived value of the shoes will differ significantly from that of an identical pair that lacks this history.

Wölfflin suggests the most obvious example of architectural character is found in the image of the picturesque ruin, in which “the tectonic form is broken up, and while the wall crumbles and holes and fissures arise, a life quickens which quivers and shimmers over the surface.” (Wölfflin, 1929 [1915], p. 24). Ruskin, too, espoused the apparent “nobility” and “glory” of ruins, not merely for their “sublimity of rents,

434 A contributing factor to — but not synonymous with — an architecture’s atmosphere (Brand, 2017).
435 Scruton wrote “sympathy,” but in the context of its employment, it would be fair to interpret this as consistent with our definition of empathy. For similar terminological issues vis-à-vis the empathy/sympathy slippage, see Debes (2015); and Jahoda (2005)
436 Such as the shoes thrown at former US president, George W. Bush, by an Iraqi Journalist during a 2008 press conference, for which a Saudi millionaire reported offered $10 million USD (Bloom, 2011, p. 3)
437 There has been a recent trend of architect-designed shoes (in particular, women’s high heels) for the company, United Nude. Contributors include the likes of Rem D Koolhaus (one of the company’s founders, and nephew of the better known Koolhaus), Zaha Hadid, and Ben van Berkel
438 Such as the shoes of holocaust victims on permanent display at the United States Holocaust Memorial Museum in Washington.
or fractures, or stains, or vegetation,” but for the “sensible beauty” of age that they present (Ruskin, 1871 [1849], p. 160).

For Ruskin, signs of aging in architecture offered “some mysterious suggestion of what it had been, and of what it had lost” (Ruskin, 1871 [1849], pp. 161-162). The image of the ruin was therefore a dialectical one with the potential to “carry the imagination to something greater than is seen” (Whately, 1777, p. 131) – an image that was at once “growth as well as decay, and potential as well as loss. [And thus] to contemplate the past was also to imagine the future” (Hill, 2015, p. 182). The fact that Ruskin includes a commentary on the picturesque virtues of the ruin within The Lamp of Memory suggests that the character perceived is a personal and subjective quality rather than a quantifiable property that simply increases with age.

This notion is best elucidated by Riegl in his Modern Cult of Monuments, when he proposed a distinction between two conceptions of temporality that contribute to our perception of architecture: historical-value and age-value [Alterswert] (Riegl, 1982 [1903]). Something is historical, claims Riegl, on the basis that it “has been and is no longer,” and is valuable to us since “every historical event is irreplaceable.” (Riegl, 1982 [1903], pp. 21, 22). The historical value is an objective quantitative value, measured from “the particular, individual stage it represents in the development of human activity” (Riegl, 1982 [1903], p. 34). And therefore, “the more faithfully a monument’s original state is preserved, the greater its historical value: disfiguration and decay detract from it.” (Riegl, 1982 [1903], p. 34).

While historical-value “wishes to suspend time,” age-value “is based solely on the passage of time” and “appreciates the past for itself” (Riegl, 1982 [1903], p. 38). Artefacts and architecture revered for their age-value “are indispensable catalysts which trigger in the beholder a sense of the life cycle, of the emergence of the particular from the general and its gradual but inevitable dissolution back into the general.” (Riegl, 1982 [1903], p. 24).

Age-value has, therefore, a far greater appeal than historical-value, since it is not a specialised perception that is required, but a more general, more human one, whose “immediate emotional effect depends on neither scholarly knowledge nor historical education for its satisfaction, since it is evoked by mere sensory perception” (Riegl, 1982 [1903], p. 24). Its impression may be felt simply in the way it “manifests itself immediately through visual perception and appeals directly to our emotions.” (Riegl, 1982 [1903], p. 33). It is my contention, therefore, that the emotive capacity of architecture, as elicited by age-value, is predicated on our perception of traces – without which there are no mysterious suggestions of what has been.

So what is the trace? The anthropologist Tim Ingold, has written extensively upon the traces of man created within the environment, and defines it as “any enduring mark left in or on a solid surface by a continuous
movement.” (Ingold, 2007, p. 43; 2011, p. 5). These traces, Ingold explains, are mostly of two types: additive or reductive. That is to say, they may consist of a removal of matter (such as a scratch or scrape) or an addition (such as a fingerprint or mark).

Within these two actions, another distinction may be made between intentional and unintentional traces. The Grimm brothers’ tale of Hansel and Gretel, for instance, tells how the children left breadcrumbs in order to trace their way back, (or similarly Theseus and Ariadne’s thread that allowed him to retrace his steps through the labyrinth). This is an additive and intentional trace.

For Ingold, humans are inherently “makers of traces” (Ingold, 2007, p. 43), such that “whenever we walk or talk we gesture with our bodies [...and] these gestures leave traces” (Ingold, 2011, p. 177). Indeed, it would seem that – from the intentional traces created in the caves of the Indonesian Island of Sulawesi (around 40,000 years ago), to the unintentional ones left on my desk by my coffee cup (5 minutes ago) – leaving traces is indeed fundamental to being human.

From these observations, we can establish a definition of the trace, as a sculpting of matter (either additive or reductive) that testifies to a previous physical presence or point of contact. Perceiving traces is therefore “a reading that is as much tactile as visual,” one that is experienced as a haptic sensation (Ingold, 2010b, S128). Understood thusly, the trace of a past touch makes “visible the invisible body of our corporeal

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439 Other types of traces include cracks, imaginary lines, and stamps or prints. See Ingold (2007, pp. 44-45); and Ingold (2011, p. 6)
440 What Böhme refers to as “leibliches Spüren” (in translating Pallasmaa’s use of “haptic”) (Böhme, 2013c, p. 99)
image” (Frascari, 1991, p. 35). Joseph Rykwert even goes as far as to suggest that any traces or markings that may be perceived as the product of human action invite the observer to instinctively interpret it as “a bodily analogue” (Rykwert, 1999 [1996], p. 122). This offers a more “anthropomorphic” theory of our empathetic perception of architecture, and a more subtle alternative to simply following the “facile road of isomorphism, isotopy, and metaphoric representations” (Frascari, 1991, p. 4).

This concept is nicely illustrated by the story of the Socratic philosopher, Aristippus: according to Vitruvius, Aristippus had become shipwrecked upon what appeared to be a deserted island. On closer inspection, he discovered some marks in the sand – straight lines and geometric forms – and reasoning that such marks were unlikely to be produced by nature he cried out: “Bene speremus! Honinum enim vestigia video.” [“Let us be of good cheer, for I see the traces of man”] (Vitruvius, 1914 [25BC], p. 167 [Bk. VI. 1]). It was from these traces that Aristippus perceived the past presence of civilisation and his salvation.

This particular capacity for observation, deduction, and creative reconstruction is not isolated to the detective skills of ancient philosophers, but has existed throughout the world for centuries in the form of storytelling. The first storytellers were huntsmen and augers, who learnt to read in the traces of nature, stories of life: “to sniff out, record, interpret, and classify such infinitesimal traces” as “excrement, tracks, hairs, [and] feathers” (Ginzburg, 1990 [1986], pp. 102, 103). These traces can tell a story, but never the story – they appear only in disparate fragments, left to be pieced together as a coherent narrative by those who are literate in the language of use.

Traces like these are often sought after and valued as a mark of the handmade, of the “workmanship of risk” (Pye, 1968). Mechanical reproduction (“workmanship of certainty”) makes the effort and skill of the human hand redundant (Gaskell, 1836). These machines are therefore seen by some architects as “creating nothing – except ten for one. Taking the soul of the thing in the process and trying to be content with the carcass or shell or husk” (Wright, 1975 [1927], p. 132). It is precisely this “prying of] an object from its shell” that “destroys its aura” (W. Benjamin, 2007 [1936], p. 223).

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441 Similarly the shaman – whose texts may be found dating as far back as 23 BC – may also seek meaning in “animals’ innards, drops of oil on the water, [and] heavenly bodies” (Ginzburg, 1990 [1986], p. 103). There is of course, a temporal difference between the two: the huntsman constructs tales of what has been, while the shaman/auger forges fables of what will be.

442 “These fragments are like beginnings without ends. [...] They are relays rather than signs. They are traces.” (Tschumi, 2002, p. 183)

443 The relationship between Benjamin’s aura and architecture is complicated by his antithetical approach to traces (“spuren”), which comes to represent both positive and negative qualities, depending on the context in which he employs it. For a more comprehensive explanation, see Jauss (1987)
Because the hand-made object was created by another’s body (like ours) we have a corporeal understanding of effort, skill, and physicality (with respect to how we use our own bodies), that enables us to appreciate the embodied performances of others. As Octavio Paz poetically recounts:

Since it is a thing made by human hands, the craft object preserves the fingerprints – be they real or metaphorical – of the artisan who fashioned it. These imprints are not the signature [...] they are a sign: a scarcely visible faded scar [...] Being made by human hands, the craft object is made for human hands: we can not only see it but caress it with our fingers. (Paz, 1974, p. 21)

These fingerprints are the traces of the object or artwork’s authenticity – the architectonics of construction (Hale, 2014a) – that attest to its unique history, its auratic quality (Hansen, 2008). These traces are indexical images that transport us through time and “invite the viewer/user to touch the hand of the maker” (Pallasmaa, 2009, p. 104). Such statements may appear to be little more than nostalgic lyricism but here, too, recent neurological research helps us understand that there is more to it than simply sentimentality.

The empathetic sensation that we experience when encountering a work of art (including sculpture and architecture) extends beyond our perception of the thing depicted, to the medium itself and the narrative of its “becoming” (Barthes, 1986 [1979]) – or what Jonathan Hale calls, the “tectonic event” (Hale, 2006, p. 62).

As with any trace, it is our material imagination that affords us the simultaneous perception of both the ‘finished’ form of the artwork, and “the work of artworks,” which is to say, its “mattering” (A. Benjamin, 2010a, p. 381): “the conditio sine qua non for attributions of meaning,” the work of art is both “a locus of activity” and “a static event” (A. Benjamin, 2010a, p. 381). In this respect, architecture is like a work of art, exhibiting the tectonic event in every element – each architectural artefact is a petrified product of action and purposeful manipulation.

Gallese and Freedberg have drawn upon their findings in neuroimaging studies to apply the idea of embodied simulation to the concept of mattering (Freedberg & Gallese, 2007; Gallese, 2011, 2015). If we were to conceive of the artwork as the result of an expressive act produced by another minded individual, then the materiality of the worked object itself has the capacity to move us: “the artist’s gestures in producing the art work induce the empathic engagement of the observer, by activating simulation of the motor program that corresponds to the gesture implied by the trace.” (Freedberg & Gallese, 2007, p. 202).

This may account for the way we feel in response to our perception of abstract expressionist artworks, such as those of Jackson Pollock, or ‘spatial’ pieces, such as Lucio Fontana’s Concetto spaziale. This is particularly

444 Something akin to Ruskin’s romantic ruminations on the virtues of the handmade (Ruskin, 1851)
445 For a more on this idea of mattering, see A. Benjamin (2006)
true of the performance paintings created by the Gutai group, the purpose of which was to “impart life to matter” (Jirô, 1956).

The researchers also posited that “visible traces of goal-directed movements, [are] in principle capable of activating the somato-topically relevant motor areas of the observer’s brain” (Gallese, 2011, p. 460). Meaning that “our brain is able to reconstruct actions a posteriori by merely observing the static outcome of the agent’s past actions” (Freedberg & Gallese, 2007, p. 202; Gallese, 2011, p. 460).446

It makes sense, therefore, that the efficacy of this simulated perception is predicated on our capacity to recognise both the properties of the material itself (its relative mutability or plasticity – how well it naturally lends itself to being worked), and the marks of making as acts of physical strength and effort that created the form (by imaginatively constructing the narrative of its becoming through the process of simulation).

This would suggest that we respond more to traces of making of which we have embodied knowledge (brush-strokes, chisel marks, and – especially – corporeal indices: moments of direct bodily contact), than those with which we have no embodied conception (industrial tools that divorce the body of the maker from the material worked): where the nature of our relationship between matter and making – our

446 See also the recent work of Hari et al. (1998); Knoblich, Seigerschmidt, Flach, and Prinz (2002); Longcamp, Anton, Roth, and Velay (2005); Longcamp, Tanskanen, and Hari (2006)
“technicity” – is most apparent (Leroi-Gourhan, 1993 [1964]). This sentiment is expressed unequivocally by Adrian Stokes, when he asks […] who would love the homogenous marble sheets in the halls of Lyon’s Corner House? […] For nowhere upon them is the human impress. Few hands have touched them, or an instrument held in the hands. They were sliced from their blocks by impervious machines (Stokes, 1978, p. 184)

In art, however, this is ordinarily where the story ends. The art object or artefact is valuable as the product of the expressive act of a particular artist. The owner of such objects is the collector of stories. Certain steps must be taken by the owner therefore, if this narrative is to remain intact and unadulterated by the profane touch of the uninitiated.

The collector therefore “frees” these things “from the drudgery of being useful,” by bestowing on them “a connoisseur value rather than a use-value” (W. Benjamin, 2002, p. 9). Thence they attain a museological status – kept out of arms reach behind glass walls: exhibited to the eye but segregated from any proximal contact. In this regard, architecture is quite different.

Architecture is intended to be inhabited, which “means to leave traces” (W. Benjamin, 2002, p. 9), since “leaving traces is not just a habit, but the primal phenomenon of all the habits that are involved in inhabiting a place.” (W. Benjamin, 1999 [1931]-b, p. 472). Whereas the spectator or viewer leaves no trace of their presence upon the work viewed, the inhabitant or user “brings the building’s materiality to the fore. It is touched, marked, scuffed. The artwork is not.” (Hill, 2003b, p. 171). This is precisely what it means to use something, as Sartre affirms:

I use it up – wear it out; that is, continuous appropriative creation is marked by a partial destruction. This wear can cause distress for strictly practical reasons, but in the majority of cases it brings a secret joy, almost like the joy of possession; this is because it is coming from us – we are consuming […] the image of enjoyment which my body invokes is that of a destructive appropriation, of a ‘creation-destruction.’ (Sartre, 1992 [1943], pp. 593-594)

These traces – the architectonics of use (Hale, 2014a, 2015) – are developed after the artefacts construction, and pen the next chapter of the object’s story, as the authorship of the object narrative is transferred from the maker to the user.448

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447 From “intactus,” literally, untouched
448 There is a literary sub-genre known as It-Narratives (also referred to as “novels of circulation,” and “object tales”), popular around the turn of the twentieth century, where the central characters are mute objects – either animate (dogs, flies, mice) or inanimate (coins, needles, hats). In these novels, the objects would either offer a conscious narrative, an internalised perspective on the events to which they bear witness, or else the objects remain silent as a
These traces of use can occur in any object which we touch, and are therefore particularly pronounced in those that we regularly handle or physically engage with:449 the patina on the brass door handle that softens towards its ends; the irregular stone steps of the cathedral, worn smooth by frequent footfall; the wooden desk with its coffee-cup and ink stains, etched initials, and ancient scars scored across its surface. This process of creating traces of use is expressed by Stokes:

Every Venetian generation handles the Istrian stone of which Venice is made. Venetian sculpture proceeds now, not by chisel and hammer, but under the hands, the feet, under the very breath of each inhabitant [...] Used, carved stone, exposed to the weather, records on its concrete shape in spatial, immediate, simultaneous form, not only the winding passages of days and nights, the opening and shutting skies of warmth and wet, but also the sensitiveness, the vitality even, that each successive touching has communicated [...] To the designed shape of some piece, almost everywhere usage has sometimes added an aesthetic meaning that corresponds to no conscious aesthetic aim.” (Stokes, 1978, p. 183)450

The stones of Venice may be a work in progress that takes place over centuries but some traces of use can also be created in an instant. Consider a dinner party: prior to the guests arrival, the table is set, the food is laid out, the furniture arranged – all in anticipation for the event that is about to take place.

Returning to the scene of the crime at the end of the evening, the evidence of use is plentiful: chinaware smeared with the remains of the meal, silverware pointing at irregular angles, glassware coated in greasy fingerprints and lipstick marks, all laying upon the stained451 and crumpled tablecloth – a topographic map of the act of sharing a meal and conversation452 – all of these traces “vividly attest to the ways they were just used” (Leatherbarrow, 2009, pp. 121-122).

Traces adorn all manner of objects that compose our everyday architectural environments, documenting our habits of inhabitation (Baudrillard, 2005 [1968]). In many respects, this is a positive phenomenon in architecture; as Hale notes “it is this emergence of a narrative dimension which lends a space its sense of temporal richness, suggesting the continuity of the past into the future” (Hale, 2006, p. 62). At the same

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449 As the fictitious detective, Sherlock Homes, notes: “it is difficult for a man to have any object in daily use without leaving the impress of his individuality upon it” (Doyle, 2014, p. 5)
450 The same image is conjured also by Rasmussen (1964, p. 174)
451 After all, “even a stain on the wall [...] tells a story” (Tuan, 2011 [1977]-b, p. 33). These stories are different, of course, from those read by da Vinci who claimed that one could see whole landscapes, faces, and innumerable scenes within the ambiguous appearance of a stain or an heterogeneous surface (Vinci, 1955, pp. 873-874). This would be an instance of Einfühlung.
452 This process has been architecturally documented by Sarah Wigglesworth (1998). See also Baudrillard’s description of furniture, and the way in which its (dis)arrangement “constitute[s] a discourse” (Baudrillard, 2005 [1968], p. 42)
time, however, the inextricable temporal component of the trace is the very thing that threatens the appreciation and consideration of character (or age-value) as a valid design component of our built environments.

If to dwell is to leave traces, then the greatest threats to the recording of stories within our architectural (con)texts, is the inhibition of inhabitation, and the prevention of quotidian mark-making. For Benjamin, this process began with industrialisation and the intervention of the machine in the manual act of making, signalling the impoverishment of storytelling (traces) and the forgetting of touch.\footnote{Just as the industrial labour process separates off from handicraft, so the form of communication corresponding to this labour process – information – separates off from the form of communication corresponding to the artisanal process of labour, which is storytelling. (W. Benjamin, 2002, p. 804 m3a, 5). See also W. Benjamin (1999 [1933]-b, 1999 [1933]-c)}

In architecture the employment of these traceless, or rather tactless\footnote{I prefer to term these materials, tactless (literally, without touch); in addition to being poorly considered or thought through it also suggests a nice opposition with tactful materials (those that embrace the palimpsestic potential of their materiality) (Brand, 2016). Moreover, this terminology affords a synaesthetic connection, as tactful or tactless may also be used to describe something that is tasteful or tasteless.} modes of production, coincided with the inception of equally tactless materials: “hard, smooth [...] cold and sober material[s],” such as glass and iron (W. Benjamin, 1999 [1933]-b, p. 734).\footnote{The ferrovitreous archetype of course, was the Great Exhibition halls and Parisian shopping arcades of the nineteenth century (W. Benjamin, 2002; Buck-Morss, 1989; Giedion, 1995 [1928]). See Chapter One} The combination created an architecture “in which it is hard to leave traces” (W. Benjamin, 1999 [1933]-b, p. 734; 1999 [1933]-e, p. 701).

The environmental psychologist, Robert Sommer argued that in using “surfaces that resist the human imprint,” we are creating “hard architecture” that inhibits the potential for personalisation or a sense of belonging (Sommer, 1974, p. 3). To inhabit these tactless environments, Sommer warned, could induce “somatic disorders, anxiety, and irritation,” and most likely, a benumbing of the inhabitant (Sommer, 1974, p. 19).\footnote{See also Chapter One}

But traces of age and use are also markers that record the passage of time, and in organic matter, the natural onset of death. A surface without traces is therefore oft revered as timeless and immortal.\footnote{A desire for immortality of course, has been embedded in human mythology for thousands of years. See for instance, the fountain of youth in Book III of The History of Herodotus (Herodotus, 2009 [440BC])} Some thinkers even claim that our contemporary environments of tactless architecture are simply reflections of our sociocultural “chronophobia” (Pallasmaa, 2012 [1983])\footnote{This is a recurrent theme in Pallasmaa’s writings: (Pallasmaa, 2012 [1982], 2012 [1983], 2012 [1995], 2012 [2003]-a, 2012 [2007]-a, 2012 [2007]-b, 2012 [2010]-a} or “terror of time” (Harries, 1997).

Riegl was already mindful of this cultural psychosis and its architectural implications. Riegl observed that in addition to age-value and historical-value, there was a growing appreciation for a further qualitative

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\footnote{See also Chapter One}
criterion, which he termed *newness-value* (Riegl, 1982 [1903]). As Riegl saw it, newness-value was the antithesis – and “most formidable opponent” – of age-value (Riegl, 1982 [1903], p. 42).

Like age-value, it is not a specialist form of appraisal, and may also be appreciated by anyone. And just as age-value manifests itself most conspicuously “in the corrosion of surfaces, in their patina, in the wear and tear of buildings and objects, and so forth.” (Riegl, 1982 [1903], p. 32), so newness-value is apprehended by its apparent lack of age-value: no signs of use. No trace of a narrative. No evidence of the actions or encounters that have taken place.

In Benjaminian terms, these objects and environments spoke only of the “poverty of experience” (W. Benjamin, 1999 [1933]-b, p. 734). This impoverishment should not to be understood as a lack of experience, but rather, that they are “poorer in communicable experience” (W. Benjamin, 1999 [1933]-b, p. 731). If buildings could speak – as Ruskin once claimed (Ruskin, 1851, p. 35) – these buildings were gagged.

The century of construction that followed Riegl’s observations had done little to remedy a sociocultural chronophobia. And while an appreciation of newness value is not a problem in and of itself, a prioritising of the visible appearance of newness implicitly encourages an insensitivity to the allure of age-value and the sensible touch of time. Even everyday objects of use, such as the latest mobile phones, are designed to be perfectly smooth, encased in a veneer of transparent glass. A notoriously fragile material, the newness value of the phone is at risk every time the owner retrieves it from their pocket. Coupled with the great expense of these objects, maintaining the appearance of newness becomes paramount, and one of the first post-phone purchases is a protective case to enshrine it (like Benjamin’s collector) – in fact, a cracked screen often renders it utterly inoperative.459

Designing for newness is unsustainable, as Jonathan Chapman explains: “In designing perfection, you also design an unstable and highly vulnerable relationship between subject and object. The moment that fragile illusion of perfection falls under threat, so too does the relationship that is founded upon it.” (Chapman, 2005, p. 131). One the one hand, this can lead to objects becoming discarded or dismissed because they start to (inevitably) lose their shine (and perceived value). On the other hand, objects designed from materials that seemingly never age or degrade (or record the imprint of time and the body) are just as likely to be disregarded and disposed of once their technology becomes outdated or their style falls out of vogue (Chapman, 2005).

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459 It should also be noted that these so-called “touch screens” are generally only sensitive to a single facet of touch, namely contact, and while there are attempts to also register pressure, this experience remains utterly diluted from the multifarious tactual encounters that we are experience with ordinary, everyday objects (see Chapter Two).
Chapman, asserts that this is because they remain “hopelessly frozen in time,” and as such, are “incapable of sustaining a durable relationship with users.” (Chapman, 2005, p. 20). This inability “to sustain empathy with their users” is due to a lack of “emotional durability” (Chapman, 2005, p. 20, original emph.).

The same holds true for our built environments, where many “buildings are [being] designed for a timeless present” (Pallasmaa, 2012 [1995], p. 309). This architectural “‘presentism’ refuses memory” (Malpas, 2012a, p. 17) and therefore inhibits the making of places – since “there is no place without memory; no memory without place.” (Malpas, 2012a, p. 12). Consequently, the built spaces we are left with “evoke an air of alienation, detachment, and lack of empathy.” (Pallasmaa, 2012 [2007]-b, p. 42, my emph.).

This is clearly at odds with the phenomenal task of architecture – to afford dwelling through the building of meaningful places (Norberg-Schulz, 1976) – or as Pallasmaa recapitulates, “to situate us in both space and time.” (Pallasmaa, 2012 [2007]-a, p. 50). Something that can only be achieved by leaving traces (W. Benjamin, 2002, p. 9). This is because we cannot simply make a place meaningful by building. Rather, a place is created through the making of meaningful acts, profound experiences and affective encounters.

Pallasmaa’s call for “an architecture of empathy” (Pallasmaa, 2012 [1994], p. 305), is therefore a call for a more considered approach to design; one that encourages a greater sense of belonging and connectedness – to the memory of the place and to the community in general – through the considered employment of emotionally durable (tactful) materials and carefully crafted details that together, afford the development of character.

Traces challenge the sociocultural penchant for tactless spaces: they have the power to “particularise a project and give voice to ways of living […] Although unplanned, even unthought, their appearance is significant, for they not only attest to a work’s real strengths but also give measure to the life it sustains.” (Leatherbarrow, 2009, p. 116). Each trace is a mark of authenticity that announces its unique narrative history, and encourages a binding form of perception with the author of the mark (Brand, 2016).

Without tactful (haptic) materials, we are unable to create architecture in which the traces of our lives may be inscribed meaning (Hale, 2014b, p. 312). Without traces, our narrative experiences are at risk of being forgotten (Ricoeur, 2004), and lost in time (Harries, 1997). And without narratives we have no sense of connectedness to our context, and no empathetic access to others or to our environment (S. Gallagher, 2011). Since

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460 For “there could be no design; no building, no engagement with place, were it not for narrative.” (Malpas, 2012a, p. 19).
[..] the only narrative that can reliably continue to have power in the life of a building is the narrative that the building itself remembers, that the building itself embodies and contains – the narrative that is given in the singular materiality of a specific built form and the place it occupies. (Malpas, 2012a, p. 19)
Generating architectural atmospheres

The character of a place, be it a city or a sitting-room, is not experienced in a contemplative or studious manner, but as an “overarching perceptual, sensory, and emotive impression of a space” (Pallasmaa, 2014, p. 20). When visiting a foreign city, we are often struck by how it feels, “that genius loci that is manifested as a characteristic imprint of a comprehensive atmosphere” (Norberg-Schulz, 2000, p. 353).461 Similarly, when we enter the door to an “apartment for the first time, we have an affective and corporeal perception that has immediate and evaluate consequences” (Griffero, 2014a, p. 35). How we feel – our emotive or affective state – is a product of our embodied, embedded, extended and enactive way of being, “precisely a fundamental manner and fundamental way of being, indeed of being-there [Da-sein].” (Heidegger, 1995 [1983], p. 67). Heidegger uses the term, Befindlichkeit, or “attunement” (Heidegger, 1996 [1962], pp. 126-134),462 to better elucidate how I am, which is to say, my physical, emotional, and psychological disposition (Böhme, 2014b, p. 99, n.2; Heidegger, 2001 [1962], p. 172, n.2).

Heidegger explains that attunements do not simply materialise out of thin air; rather we are always already attuned, even if we are unaware of it (Heidegger, 1995 [1983], p. 68; Schmitz, et al., 2011, p. 154).463 It is because of this affective predisposition that we are capable of being touched or affected – by things, people, and places – which disclose themselves to us by way of mattering (Heidegger, 1996 [1962], p. 129). In other words, what matters to us at any particular time is largely predetermined by our affective state at that time. Or differently put, it is only because we are always already attuned, that “things that matter to us can be encountered”: only once we are feeling fearful – are attuned to fearing – may we “discover that what is environmentally ready-to-hand is threatening.” (Heidegger, 2001 [1962], p. 176).

For were we not already attuned in some way or other, we would be purely beholding. We would not feel any way towards anything or anyone, nothing would affect us, and we would be affectionless (Heidegger, 1996 [1962], pp. 129-130).464 Our particular attunement colours, tunes, and tinctures our perceptions, and concordantly our thoughts, intentions and actions: “A lover returning from a happy encounter finds that all

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461 Similarly, see Norberg-Schulz (1976, p. 14). Terminological note: in Genius Loci, Norberg-Schulz often uses the word “atmosphere” interchangeably with “character”. As should already be apparent, I use these terms to designate two different things, whereby “character” refers to something or someone’s hermeneutical background or narrative history. Like emotion, character is an empathetically perceived surfaceless space that contributes to the overall atmosphere of something. More on this later.


463 “And precisely those attunements to which we pay no heed at all, the attunements we least observe, those attunements which attune us in such a way that we feel as though there is no attunement at all, as though we were not attuned in any way at all – these attunements are the most powerful.” (Heidegger, 1995 [1983], p. 68)

464 And “could never discover anything like that which is threatening.” (Heidegger, 2001 [1962], p. 177)
of the people whom he meets are more happy and more attractive than would ordinarily be the case: he has projected into them his own happiness and perfection” (Klages, 2015, p. 44). Similarly, someone in an irritable mood will find themselves to be more easily annoyed or frustrated than when they are not attuned to irritability.465 Their attunement has left them predisposed to the irritable aspects of their environment which seem to emerge from the background of everything else (Heidegger, 2001 [1962], p. 177).

Advancing Gibson’s notion of affordances,466 we may therefore understand this phenomenon as emotive or attuned affordances. Heidegger recapitulates the issue thusly:

Attunements are not side-effects, but are something which in advance determine our being with one another. It seems as though an attunement is in each case already there, so to speak, like an atmosphere in which we first immerse ourselves in each case and which then attunes us through and through. (Heidegger, 1995 [1983], pp. 66-67)

The question then, is what do we mean by atmosphere? And thence, in what way is our attunement or affective state atmospheric, how is it perceived, and what its architectural significance?

Architecture has long been associated with atmosphere, and it is no coincidence that some of the most readily perceptible atmospheres in architecture belong to buildings with a rich narrative history, where particular embodied practices or routines have seemingly become sedimented into the fabric of the building itself – making meaningful places in the process.467 This is often quite pronounced in religious architecture, where the atmosphere is particularly palpable.468

It may not be surprising therefore, that the dissolution of atmosphere in architectural theory went hand in hand with that of organised religion. Enlightenment brought a scientific sterility and mathematical monotony to architectural design that was not consonant with the murky worlds of empathy, affect, and a sense of place (Pérez-Gómez, 2016).

465 The word ‘mood’ is potentially problematic, as this is often the English translation of choice for stimmung in Heideggerian texts, and risks confusing attunement or affective states with the other translation of stimmung: ‘atmosphere’. For the duration of this thesis, I shall use mood sparingly, but where I do so, it shall be in describing the affective states of others. This is consistent with Böhme’s description of “moods or feelings in the narrow sense, like joy, sorrow, seriousness.” (Böhme, 2014c, p. 50). More on this shortly. For a greater elucidation of mood in Heidegger, see Blattner (2006), and his distinction between moods, emotions, sensibilities and virtues.

466 Gibson coined the term “affordance” in order to describe the perceived manipulable opportunities that an object or environment may present (J. J. Gibson, 1968). Beyond the observation of “constant properties of constant objects” (such as texture, colour and size), the “affordances of an environment are what it offers the animal, what it provides or furnishes, either for good or ill.” (J. J. Gibson, 1979, p. 127).

467 For more on the importance of narrative in inhabitation and place-making, see Furse-Roberts (2012); Hale (2012b); Wischer (2012)

The geometric space of Descartes was quantifiable space, in which a function could be prescribed and performed by a user whose requirements were thought to be equally predictable and predefined (Hall, 1990 [1966]). This position is exhibited in the architectural works and teachings of Jean-Nicolas-Louis Durand, which emphasises functional, rational, and utilitarian concerns to the denigration of the sensual, mystical, or metaphysical (Durand, 2000; Pérez-Gómez, 1983, pp. 297-326).

Under these and other sociocultural conditions, an appreciation for the affective potential of atmosphere seemingly disappeared from architectural thought, so much so that up until a few years ago, there was a relatively little written on the importance of atmosphere in architecture (H. L. Dreyfus, 2012). Today we are experiencing something of a renaissance of atmosphere in architectural thought,\(^\text{469}\) and a return to the romantic notion of \textit{Stimmung}.

The German word, \textit{Stimmung}, has been translated as atmosphere in English, but its breadth of application may also see it translated as \textit{character}, \textit{mood}, and \textit{tuning} depending on context. Indeed, it has been argued that there is no suitable English translation for a word that best expresses “the unity of feelings experienced by man face to face with his environment (a landscape, Nature, one’s fellow man) and would comprehend and weld together” all of the perceptible qualities of one’s surroundings (be they material or immaterial, animate or inanimate) “into one harmonious unity” (Spitzer, 1944, p. 412).

This range is a reflection of its diverse etymology, which Spitzer retraces to the bifurcated roots of \textit{temperatura} – from which \textit{we} get temper, temperature, and temperament (terms concerned with temperance and well-being) – and \textit{concordia} – related to both \textit{cordis}, ‘heart’ and \textit{corda}, ‘string’ (hence, \textit{accordance} – to be of one heart) (Spitzer, 1945). The result is “a harmonious state of mind” (Spitzer, 1944, p. 413), or “\textit{the attunement of embodied consciousness}” (Pérez-Gómez, 2016, p. 34). \textit{Stimmung} is therefore concerned with tuning our emotional experiences – tincturing the balance or proportions of the mixture so that the overall effect is experienced as a harmonious whole.

In common parlance, we use the term ‘atmosphere’ with reference to all manner of things – objects or artefacts, situations or events, places and environment (Böhme, 1993). We may say that the morning meeting had a tense atmosphere, that the football match had an exciting or energised atmosphere, that the twilight created a romantic atmosphere, that the old man emanated a warm and friendly atmosphere, and that the cottage had a cosy or inviting atmosphere.\(^\text{470}\)

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\(^{470}\) (Böhme, 1993, 1998, 2013a, 2014b; Griffero, 2014a)
Concurrently, we have also developed a rich and varied depository of atmospheric adjectives: “serene, melancholic, oppressive, uplifting, commanding, inviting, erotic” and so on (Böhme, 1993, p. 114). This expansive range of applications has resulted in definitions that tend to be rather open and vague, suggesting that atmospheres are something nondescript, ambiguous, and ineffable: “some kind of sensuous emission of sound, light, heat, smell, and moisture; a swirling climate of intangible effects” (Wigley, 1998, p. 18). But being intangible does not mean that the concept of atmosphere lies beyond our reach, nor that we are somehow oblivious to its presence (Böhme, 1993). On the contrary, we feel it. We are moved by it. It touches us.

Emotions, with their physiognomic manifestations (Böhme, 2014c, p. 46), are felt in and through the feeling body (Leib). Which is to say, the “indivisible and pre‐dimensional” body (Schmitz, 2002), in which our corporeal stirrings are made manifest as a felt sensation “belonging to [us] in [our] vicinity – not always within the boundaries – of [our] material body” (Schmitz, et al., 2011, p. 253).

In the previous section, I discussed how emotions are an expressive‐unity that enables us to empathetically perceive and, to a certain extent, feel the affective states of others. Emotions are therefore, not like things – with quantifiable properties – they are rather, “quasi‐things” (“Haldbinge”) (Schmitz, 2014, p. 39), and possess certain distinctive characteristics: they are spatial, temporal, and experientially indistinct. Emotions are spatial in that they are voluminous entities with indistinct borders or boundaries, a “surfaceless space” like that of a sound (or indeed, silence), the weather, or an odour (Schmitz, et al., 2011). Quasi‐things are therefore, not “something perceived at a distance, but something within which one is enclosed,” enveloped, or immersed (Böhme, 2013a, p. 4). Such spatialised things are not fixed or static, but fugacious and capricious, experienced in “the now of the primitive present, the absolute moment of sudden emotional involvement” (Schmitz, et al., 2011, p. 252). They can creep up on us gradually without our knowing, or they may suddenly wash over us all at once. They are sustained for as long as they are corporeally perceived (felt), as a lived‐duration or durée réelle (Bergson, 1950 [1910]), and are “very often called up time and again, with interruptions” by the particular events, circumstances or situations in which

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471 See also Böhme (1998, p. 112; 2014c, p. 43).
473 Leatherbarrow cautions that “while a room’s atmosphere is unmistakable and overpowering, all attempts to explain its several sources or causes are defeated by unity, or indivision, of the total circumstance.” (Leatherbarrow, 2009, p. 37). Recent work by Böhme in particular suggests that this is not the case, and that any attempt would still be worthwhile (Böhme, 2013a, 2014b, 2014c). Baudrillard also does an excellent job in this respect (Baudrillard, 2005 [1968])
474 Like the redness on the cheek of someone who blushes with shame or the tears shed by someone experiencing sadness, these physiognomic expressions are immeasurable in any meaningful way: they tell us nothing about how embarrassed or sad someone is (or the cause for their embarrassment/sadness). (Heidegger, 2001 [1987], pp. 81, 82)
475 Also translated elsewhere as “half‐entities”(Schmitz, et al., 2011, p. 246) and “semi‐things” (Schmitz, 2002, p. 492)
476 See also Leatherbarrow (2009, p. 36); and Schmitz, et al. (2011, p. 154)
we find ourselves (Schmitz, 2002; Schmitz, et al., 2011). In each instance, quasi-things do not exist as entirely out there, nor are they simply an internalised cogitation (Heidegger, 1995 [1983], p. 66). They are, rather, “subjective facts” (Schmitz, 2002) requiring the co-presence of both subject and object.

These characteristics are also true of atmospheres: they “are essentially spatial” (Böhme, 2014b, p. 93); they “come neither from ‘outside’ nor from ‘inside,’ but arise out of Being-in-the-world.” (Heidegger, 2001 [1962], p. 175), making them “the prototypical ‘between’ phenomenon [...] something between the subject and the object” (Böhme, 1998, p. 112; 2014c, p. 43); and perceiving them “means being touched by them in the felt body” (Griffero, 2014b, p. 16).

From this we may conclude that both affective states and atmospheres qualify as quasi-things. We may say therefore that “atmospheres are spatialised feelings” (Griffero, 2014a, p. 37) or “emotionally felt spaces” (Böhme, 2014a, p. 96), while “emotions are corporeally moving atmospheres poured out spatially” (Schmitz, et al., 2011, p. 257). It also suggests that our attunements are atmospheric in nature, and that atmospheres are experienced emotionally.477

But it does not imply that the only atmospheres we experience are the affective states, or that our affective states are paradigmatic of atmospheres. Rather, I propose that our emotive attunement is but one type of atmosphere (albeit one that is fundamental to our being-in the world).

Consider the communicative aspect of affective states discussed earlier. If we understand that affective states are experienced as an expressive-unity (Scheler, 2008 [1923], p. 262), and that it is through their outward components (expressive acts) that we come to perceive and empathetically feel the affective states of others, it follows then that our own emotive attunement may influence the attunements of others and vice versa.

For example, when encountering a friend in a morbid or depressed state, we may find ourselves feeling deflated and subdued (Heidegger, 1995 [1983], pp. 66-67). But this is also true for our experience of places or situations in which there are no others (no expressive acts to perceive) (Böhme, 1993, p. 119). Yet, we still have an impression, a feeling of these places that alters our own attunement or, put better, that ‘tunes’ our own affective states with the overall atmosphere of the place itself (Böhme, 2013b, p. 27).

For instance, “the mood of a scoundrel or a wretch can, to their own surprise, be changed to be more peaceful or even pietous by the atmosphere of a church.” (Schmitz, et al., 2011, p. 257). Similarly, we do not say that a valley appears serene “because it is in some way similar to a cheerful person,”478 but because the atmosphere which it radiates is serene and can put [us] in a serene mood” (Böhme, 1993, p. 112). Such

477 (Böhme, 1998, p. 115; 2014a, p. 96; Griffero, 2014a, p. 32; 2014b, p. 15)
478 Contra Simulation Theory
experiences expose the fact that the attunement we have, the feelings that belong to us, have somehow been influenced by something outside of (and in addition to) ourselves.

It is this atmospheric quality which belongs to the place itself that “determines what and how one ‘sees’.” (Heidegger, 1996 [1962], p. 159). This is where the architectural significance of atmospheres reveals itself – in the distinction between the mood in a room and the mood of a room: “The mood in a room can be gay, sad, anxious, expectant, solemn, tranquil, etc. Moreover, the mood of the room itself can be warm, frightening, restful, reverential, oppressive, cheerful, creepy, soothing, depressing, etc.” (H. L. Dreyfus, 2012, p. 23). Dreyfus explains that the former is produced, modulated and manipulated by the actions of those who inhabit the space – supporters and players at a sporting event, mourners at a funeral, politicians and protesters at a rally, etc. Creating the mood of a room, however, remains the preserve of the architect or designer.

Understood thusly, our own attunement or affective state – that we are always already in and that we bring with us in every act of perception – is atmospheric, but it is not the atmosphere. Atmospheres are “spaces pregnant with a mood,” but it need not be our mood (Böhme, 2014b, p. 93). Our mood is only one of a number of determining factors or “atmospheric generators” (Böhme, 2013a, 2014b, 2014c) that come together in forging our overall felt-impression of a place.

In this sense, architecture is indeed “defined by atmosphere,” as Mark Wigley once said (Wigley, 1998, p. 27). And in many respects this has always been the case. Böhme suggests that atmosphere is the subject matter of architecture (2003), an attitude that would certainly be consistent with that of Adolf Loos, who claimed that when designing architecture, atmosphere comes first: “fear and horror if it is a dungeon, reverence if a church, respect for the power of the state if a government palace, piety if a tomb, homeliness if a residence, gaiety if a tavern.” (Loos, 1982 [1898]-b, p. 66).

This understanding of atmosphere as the prima facie of architecture is shared by Peter Zumthor. In his own publication, Atmosphere (2006), Zumthor recalls the experience of sitting in the sun, in front of a café on the square of a grand arcade, taking in “the magic of things, the magic of the real world”; the atmosphere (Zumthor, 2006, p. 19). Ruminating on the affective qualities of the space, Zumthor asks himself what it was that touched him: “Everything. The things themselves, the people, the air, noises, sound, colours, material presences, textures, forms too […] my mood, my feelings, [and] the sense of expectation that filled me while I was sitting there” (Zumthor, 2006, p. 18).

The question for Zumthor (indeed, all architects and designers) therefore, is – given the subjective nature and diversity of these affective qualities – (how) can we ensure the generation or prevalence of any one particular atmosphere? (Zumthor, 2006, p. 19).
One response may simply be that we cannot; that it is ultimately up to the perceiving inhabitant, and that we (as makers and shapers of spaces) therefore cannot hope to condition their perceptions, thoughts, or actions, except in the most reductive manner and restrictive environments (such as prison) (Sommer, 1969, 1974). But a quick glance into parallel design disciplines suggests that the deliberate construction of atmospheres has been an established practice for some time. The paradigmatic example would be that of the scenography (Böhme, 2013a, 2013d), whose task it is to “generate in a performance space an atmosphere [...that] attunes the audience to the events to come” (Böhme, 2014b, p. 94).479 This is achieved through careful composition of a number of devices such as sound effects, lighting, props, backdrops, scenery and costume (Böhme, 2014c, p. 50).

![Figure 40 - Atmospheric Production at the Drury Lane Theatre: “The Unknown Fairyland and the Known: 'Jack and the Beanstalk’s' Famous Home”](image)

Source: The Illustrated London News (1910)

Upon reflection, many of these atmospheric ‘devices’ will be familiar to us, as we select, arrange and generally ‘dress’ our homes. In so doing, we transcend from the passivity of “an owner or a mere user” and become “an active engineer of atmosphere” (Baudrillard, 2005 [1968], p. 25).480 Even the most routine process of getting up each morning, requires us to select from our wardrobe the clothes we wish to wear for the day – their cut, colour, material, thermal properties, and so on – based on the atmosphere we wish to generate as part of a larger composition: how each element of clothing combines with the other, as well as the meteorological conditions of the day, my mood, the situations in which I am likely to engage, and the

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479 See also Epilogue
480 See also Hill (2003a)
overall impression I wish to create (such as an air of confidence, affability, piety, sobriety, professionalism, and so on).

In short, we dress ourselves based on the atmosphere we wish to present. We dress a room for the same reasons. And this holds true for any act of conscious design where the intention is that the object, individual, or space, is perceived and experienced in a certain way. That we have this *feeling* about it.

In architecture the art of staging or dressing is by no means confined to theatres, and can be found anywhere that there is some spectacle to be exhibited, performed, or otherwise revered: relics in secular structures, artworks in galleries, cultural artefacts in museums, and even the produce at the local supermarket.

Once again, the Crystal Palace is emblematic of this practice, as it was considered to be “a piece of sculpted atmosphere” (Giedion, 1995 [1928], p. 11) and “the only building in the world in which atmosphere is perceptible” (Merrifield, 1851, p. 2). Being constructed of glass – “the most effective conceivable material expression of the fundamental ambiguity of ‘atmosphere,” (Baudrillard, 2005 [1968], p. 42) – the structure itself presented a delirious, almost incomprehensible image to the contemporary spectator, so that as “the eye sweeps along an unending perspective that fades into the horizon [...] all materiality is blended into atmosphere.” (Bucher, 1851, p. 10).

In an attempt to mitigate this visual blending effect Owen Jones – applying “sound scientific principles” – dictated that the underside of each girder should be painted red, while the round portions of the columns were to be yellow, leaving the hollows of the capitals blue. The selection of colours and the ratio of their application (8B:5R:3Y) was intended to appeal to all nations, and make the structure “appear higher, longer and more solid,” taking care all the while, not to “fatigue the eye” (O. Jones, 1850) – a process of tincturing until the desired effect is produced which Jones compares to the tuning of a music instrument. The result was said to be “a most harmonious effect.” (Anon, 1851a, p. 30).

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481 The English translation I have cited here comes from Giedion (1967 [1941], p. 254). But his reference (Bucher, 1851, p. 174) appears to be mistaken. From the original German copy, it seems that Bucher does not actually mention ‘atmosphere’ (as either “Stimmung” or “Atmosphäre”). The closest match I can find to Giedion’s quote would be “in the end all that is corporeal, even the lines, disappear leaving only colour” [“in dem alles Körperhafte, selbst die Linie verschwindet und nur noch die Farbe übrig bleibt”] (Bucher, 1851, p. 10). Curiously, this is probably more poetically expressed as Marx’s “all that is solid melts into air” (Marx & Engels, 1969 [1848]) – which is also the title of Marshall Berman’s book, in which the author quotes Giedion’s translation of Bucher (Berman, 1988, pp. 239-240).

482 The colours chosen were intended to have a particular effect upon the visitors, as suggested by “the laws relating to the harmony and contrast of colours [...] developed by M. Chevreul, professor of chemistry” (Merrifield, 1851, p. 3).

483 By “dispell[ing] the prejudices of those whose eyes are yet unformed to colour [...] develop[ing] the imperfect appreciations of others, and [...] save[ing] this country from the reproach which foreign visitors, more educated in this particular than ourselves, would not fail to make were the building otherwise painted.” (O. Jones, 1850)
Beyond the hallucinatory and otherworldly conditions of the interior structure of the palace itself, there were micro-phantasms in the form of the individual exhibitions: exhibits from over thirty different nations created microcosms with very “different characters” generated by the objects on display (“their texture, fashion, and style of execution”), and “the exhibitors themselves” (“marked and peculiar in their physiognomy, costume and manners”) (Anon, 1851a, p. 36). To walk from one court to another was thus to cross mountain ranges and oceans, with different scents, appearances, languages, and continence.

Evidently, the Crystal Palace proffered a variety of atmospheric effects, or as Sloterdijk described it, “a new aesthetic of immersion” (P. Sloterdijk, 2008, p. 12): “the production of an environment into which its inhabitants submerge, body and all” (Peter Sloterdijk, 2011, p. 106).

Today the rules of staging or dressing are considered standard practice within the domain of marketing and consumer psychology. It has even been suggested that “interior decorators, set designers, and commercial designers of shop interiors and exhibits, not to mention funeral parlours and wedding venues” are more inclined to recognising the affective power and potential of atmospheres than architects (Pallasmaa, 2014, p. 22). This implies two things about the nature of atmospheres: firstly, they may be intentionally designed and crafted and, secondly, they are not entirely subjective, and it is therefore possible to forge an atmosphere that will attune most people in the same manner (if it was not, the whole practice would be void).

In fact, in many instances we almost expect a certain atmosphere – if we go on holiday we are searching for the realisation of the atmosphere promised in the promotional material; the bar or restaurant that we return to each week is the one that has an atmosphere preferable to the others; and the house we buy is the one that feels right to us – and we find ourselves quite put out if this is not the case (if the perceived atmosphere does not meet our expectations – a sort of atmospheric incongruence). It would seem therefore, that the first task facing the architect – after deciding upon the atmosphere that s/he wishes to create – is how it ought to be created.

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484 One nave was occupied by the United Kingdom and the British Colonies – India, Jersey & Guernsey, Ceylon (Sri Lanka), Ionian Islands, Cape of Good Hope, Canada, Nova Scotia, New Zealand, Bermuda, The Bahamas, Australia, Van Diemen’s Island (Tasmania), and Trinidad – while the other was reserved for the “foreign” nations – United States, Russia, Sweden & Norway, Denmark, Zollverein (a coalition of German states), Austria, Holland & Belgium, France, Italy, Spain & Portugal, Turkey & Egypt, Persia (Iran), China, Switzerland, Tunis (Tunisia) and Brazil.

485 On exhibiting atmospheres, see Dorrian (2013, 2014), Crawley (2012), Urbach (2010), and Jenner (2013)

486 (Argo, et al., 2008; McCabe & Nowlis, 2003; Andrea C Morales & Fitzsimons, 2007; Schifferstein & Hekkert, 2008; Spence & Gallace, 2011)

487 (Böhme, 2010b, p. 23; 2013a, p. 3; 2014b, p. 94)
After careful consideration I have composed a list of the six primary atmospheric generators (many of which have been discussed in the preceding chapters). 488

- Moods and affective states: our own Befindlichkeit, or “attunement” (Heidegger, 1996 [1962], pp. xv, 126-134). The particular emotive state that we find ourselves already in comes to colour our perceptions, thoughts and actions (attuned affordance), often without our noticing. The perceived atmosphere results from the superimposition of our own affective state and that of the place, situation, or company in which we find ourselves, such that it may become explicit if radically different (deconstructive interference), or merely heighten our existing state (constructive interference), such as when we are already feeling low and encounter friends in a melancholic mood. This reciprocity of affective influence may result from empathetic perception, or simply emotional contagion. 490 This is also employed intentionally in various circumstances, from the ancient custom of hiring professional mourners (moirologists) to the use of so-called ‘canned laughter’ in television programs, aimed at priming or tuning the audience to a particular affective state. 491

- Situations, activities, and events: something that is taking place within our experiential vicinity (such as a sporting event, a concert, or a rally), that has meaning or significance to us (political, religious, cultural, social, familial etc.). In this instance, there are already certain prescribed conditions that we are aware of, including how to act, what to wear, who to talk to, where to go and so forth: “they have Anmutungscharakter that is sensed” (Böhme, 2006, p. 134; 2014c, p. 51). These atmospheres often have a clear sense of a beginning and an end, allied as they are with the temporary nature of the event itself. Examples include the tense or anxious atmosphere of the hospital waiting room, the rousing atmosphere of a political demonstration or rally, or the shared atmosphere of devastation/jubilation at the sight of your team conceding/scoring the winning goal.

- Narrative history or massive hermeneutical background: the stories of use and creation that underscore an object, place, or person’s wider cultural/political/historical significance (S. Gallagher, 2011). These stories may be read from its discernible character (traces). From former U.S. president

488 Böhme suggests a similar atmospheric taxonomy divided into “moods, phenomena of synaesthesia, suggestions for motions, communicative and social-conventional atmospheres.” (Böhme, 2013a, p. 2; and also Böhme, 2014b, pp. 93-94; 2014c, p. 50). On closer inspection, however, I found this distinction to be rather vague and (at least in his English translations) unhelpful, as it was lacking in further elaboration.
489 Or “discrepancy” (Böhme, 2014b, p. 93)
490 For a basic overview of these terms, see Bruin, Strijbos, and Slors (2014). Emotional or affective contagion should not be confused or conflated with empathy. For a more phenomenological distinction see in particular S. Gallagher (2012); Zahavi and Overgaard (2012)
491 See also Ruskin’s Of the pathetic fallacy (1863 [1856])
Kennedy’s tape measure,\(^{492}\) to Hamlet’s Kronberg Castle, the ontological history or story matters to us, and helps to orientate our beliefs and value judgements.\(^{493}\) The difference between an original artwork and an identical forgery is the perceived value based on assumptions regarding the intent and talent behind its conception and creation (Dutton, 2009). Which is to say, while they may look alike, their stories would be different. The significance of the original is a product of our “nostalgia for origins and obsession with authenticity”: “we are fascinated by what has been created and is therefore unique, because the moment of creation cannot be reproduced.” (Baudrillard, 2005 [1968], pp. 80, 81).

- **Einfühlung**: the mimetic faculty we possess for imaginatively perceiving “hints and traces of attitudes, or emotions” in our inanimate surroundings (R. Vischer, 1994 [1873], p. 105). A weeping willow is, for instance, not perceived as being sad, or having visible similarities to a sad person, but rather as emitting an affective atmosphere of sadness because of the way in which “the shape, direction, and flexibility of willow branches convey the expression of passive hanging,” suggesting an analogical similarity to the expressive act of sadness (Arnheim, 1994 [1966], p. 64). Here we have “not anthropomorphic metaphors of action, but an adequate reproduction of the motor suggestions coming from the forms and immanent to them.” (Schmitz, 1966, p. 38). The manner in which we recognise and respond to these motor suggestions, may be understood as a form of empathetic perception.

- **Meteorological conditions**: following an etymology that traces atmosphere back to Eros, and vapour or breath (Leatherbarrow, 2009, pp. 19-41; Pérez-Gómez, 2016, p. 109), the weather is often cited as the most quotididnian atmospheric experience that literally touches us (Ingold, 2012) – wind, rain, sun, fog, hail, lightning, and so on – “all of which fundamentally affect [our] moods and motivations, [our] movements” (Ingold, 2008, p. 1802). Coupled with the changing azimuth of the sun, our experiences of the atmospheric environment are allied with a sense of time and duration: a single space may feel completely different during the day than at night, in summer than in winter, and on a misty morning than on a wet and rainy afternoon. In each instance, the physical properties of the space are the same, but the feel of the place is irrevocably changed: “Does not an attractive home render winter more poetic, and does not winter augment the poetry of the home?” asks Baudelaire (Baudelaire, 1996, p. 113). The atmospheric potential of the weather has long been employed by artists, such as Turner, who confessed that “atmosphere is my style.” (Evans & Whitehouse, 1956, p. 273). With reference to the landscape paintings of John Constable,

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\(^{492}\) Sold for $48,875 in 1996 (Bloom, 2011, p. 3)
\(^{493}\) (Newman & Bloom, 2014; Newman, et al., 2011)
Turner observed how the natural elements – air (including smoke and clouds), water (including steam and fog), earth (and dust), and light – come together to form the background of the image (Ziff, 1963). This background is not a subservient element of the painting that simply fills-in the space around the foregrounded figures but, as Leatherbarrow explains, one that comes to play more of a contextualising role, working with the foreground in generating its overall tone or mood: “less recessive than lingering, background in the double sense of where a figure comes from (its history), and its supporting surround (present appearances).” (Leatherbarrow, 2015, p. 96).

- Materiality and the corporeal imagination: we have a powerful and multisensorial memory of past encounters with different forms and materials, such that even the flattened photograph of brickwork can rouse ideas of solidity, roughness, mass and heat. A single material can come in many sizes, shapes, colours, and textures. These variations can affect the acoustics, the temperature, the way the light is caught, the way the shadows are cast, and ultimately the way we feel, what we perceive, and how we act. All of these sensual experiences with matter are felt in and with the lived-body in action, and perceived synaesthetically as a holistic sensation. They are then stored as an embodied memory and may be recalled by the mere image of the thing (Katz, 2013 [1925]). In addition, each material has its own historical and cultural significance, and may come to symbolise any number of things from power and prosperity to poverty and piety (Baudrillard, 2005 [1968]). Hence Nietzsche’s familiar dictum: “Stone is more stony than it used to be” (Nietzsche, 1996).

For architects and designers, creating or making an atmosphere “means setting the conditions in which the atmosphere appears,” which is achieved through the careful and considered composition of atmospheric generators (Böhme, 2013a, p. 4). As my own list suggests, the generators of atmosphere are manifold – a variegated list of disparate elements (tangible and intangible), each with innumerable emanations. Some of these generators afford a degree of customisation or fine tuning (colours, artificial lighting, aromas, etc.). Others we may simply attempt to manage or mitigate their effects and influence (views, daylight, thermal and acoustic transmission, etc.). Others still remain, for the most part, quite out of our hands (the affective state of others, the narrative history of the space, and the complex of meaning [Sinnzusammenhang] – including sociocultural or religious practices that ought to be observed and upheld within a particular

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494 For more on the relationship between architecture, atmosphere and the weather, see in particular Jonathan Hill (2006, 2013) and Bhatia and Mayer (2010)
495 See Chapter Three
496 Or sound (Keysers et al., 2003; Kohler et al., 2002; Pazzaglia, Pizzamiglio, Pes, & Aglioti, 2008), or even the sight of the word ('action words') (Hauk, Shtyrov, & Pulvermüller, 2008; see also Lundborg, 2014, pp. 117-125).
497 On the desire for the appearance of natural materials like stone, see Epilogue
place). All of these generators actively contribute to the felt qua\-lia of the place, synaesthetically and emotionally perceived as the overarching feeling (Griffero, 2014b).

The last species of generator is of particular importance to architects and designers, as it is the one that we have the greatest access to and understanding of (Böhme, 2013b, p. 27). A single material, like stone, can differ in size, colour, texture, and composition. It can be employed architecturally as a flat, rectilinear wall, a curvaceous, undulating surface, or a voluminous, vaulted ceiling. Its application can affect the acoustics of the space, the temperature, and the impression of solidity that we experience. As Zumthor explains, “you can saw it, grind it, drill into it, split it, or polish it – it will become a different thing each time. Then take tiny amounts of the same stone, or huge amounts, and it will turn into something else again.” (Zumthor, 2006, p. 25).

But this is not what gives the material its meaning or atmospheric significance; these are the qualities that are bestowed by us. Which is to say, that whether we find a material to be noble or regal, effeminate or masculine, industrial or rural, is the product of our own time and cultural ideology. In this regard, “the entire modern environment is thus transposed into the level of a sign system, namely ATMOSPHERE” (Baudrillard, 2005 [1968], p. 40).

The significance of these materials therefore “lies largely in their atmospheric potentiality.” (Griffero, 2014b, p. 96), and the same holds true for their “colour, form and so on.” (Baudrillard, 2005 [1968], p. 68): colours have psychological and moral overtones. A person will ‘like’ a particular colour, or have ‘their’ colour. Colour may be dictated by an event, a ceremony, or a social role; alternatively, it may be characteristic of a particular material […] they are simply metaphors for fixed cultural meanings. (Baudrillard, 2005 [1968], p. 30)

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498 This is not to say, of course, that the other types of generators should be ignored or dismissed as being irreconcilable with the intended atmosphere of the space. In fact, the most moving atmospheres are often those that result from a combination of generators, including those that we can work on (material and formal) and those that we can work with (meteorological and historical). There are countless examples of architecture that has sought to embrace one or more of these mercurial elements to compliment and offset the more tangible aspects – such as the way that the roof of Renzo Piano’s Beyeler Foundation Museum diffuses the natural light overhead, gently tincturing the appearance of Cézanne’s mountains (Chapter Three), or similarly, Zumthor’s Kunsthana in Bregenz (Chapter Five).

499 Such is our familiarity with matter, that when we see it employed in a novel or unexpected manner, the effect is initially one of surprise or excited anxiety, followed shortly after by bemusement or suspicion, provoking a desire to touch, knock, or tap the surface for confirmation of authenticity. Such is the sensation when confronted with the undulating brick facade of the UTS Dr Chau Chak Wing Building, by Gehry, or the disproportionally long cantilever of the Balancing Barn, by MVRDV and Mole Architects.

500 And while the meaning may be specific for each culture, they are by no means definitive, and are always subject to further influence and change (Baudrillard, 2005 [1968]). The colour Blue, for instance may give us the impression of coldness, sadness (being ‘blue’ or having the blues), calmness (like the sky or a lake), and is often associated with baby boys. But little over a century ago it was the colour of choice for baby girls, and has been described by Goethe as the
“Correctly used, colour may express the character of a building and the spirit it is meant to convey” (Rasmussen, 1964, p. 218). Hence, “to paint the walls means to essentially change the atmosphere of the room.” (Griffero, 2014b, p. 2). This has been demonstrated to great effect by artists and architects such as James Turrell, Luis Barragan, Ricardo Legorreta, Olafur Eliasson, and Steven Holl.

Beyond the visible potential of materials (including their “tactile values” (Berenson, 1907 [1896])), we are also affected by other qualia within our embodied sensorium. Odours, for instance, have a depth of restlessness or anxiety (Goethe, 1840 [1810], p. 310). Moreover, different cultures associate blue with immortality (China), mourning or grief (Korea, Iran and Mexico), liberalism (US) and conservatism (UK and EU).

See also Böhme (2010b, p. 28)
inaccessible to our other senses: they are, like emotions and sounds, a “surfaceless space” (Schmitz, et al., 2011), that we can become so accustomed to that they recede into the background of our conscious awareness, or can catch us by surprise, accosting us out of the blue and provoking an immediate, visceral response (particularly in the case of disgust).  

Furthermore, scents are synaesthetically and emotionally fused within our memory to particular people and places from our past. It is “the inaccessible refuge of the mémoire involontaire [...] this may be so because it deeply drugs the sense of time. A scent may drown years in the odour it recalls” (W. Benjamin, 2007, p. 184). For all these reasons Böhme opines that “smells are atmospheric to a greater degree than other sensory phenomena” (Böhme, 2006, p. 128).

502 Griffero even suggests that odours give rhythm to our daily lives (morning coffee and burnt toast, flowers in bloom, etc.) (Griffero, 2014b, p. 64).

503 This is aptly demonstrated by Rilke, who poetically describes the phenomenological richness of the odours that stubbornly clung to the walls of a demolished home: “There stood the middays and the sicknesses and the exhaled breath and the smoke of years, and the sweat that breaks out under armpits and makes clothes heavy, and the stale breath of mouths, and the fusel odour of sweltering feet. There stood the tang of urine and the burn of soot and the grey reek of potatoes, and the heavy, smooth stench of aging grease. The sweet lingering smell of neglected infants was there, and the fear-smell of children who go to school, and the sultriness out of the beds of nubile youths. To these was added much that had come from below, from the abyss of the street, which reeked, and more that had oozed down from above with the rain, which over cities is not clean.” (Rilke, 1992 [1949], pp. 48-49). All of this from a single moment of exposure. Every single, unavoidable inhalation, is an olfactory composition of places, people, lives, from an ensemble of visceral odours and corporeal fragrances.
The acoustics of a place is also an important consideration, one affected by form and material properties that can impact upon the atmosphere. Be it the tolling of church bells in the village, the sharp cries of gulls from the harbour, or the honking horns of irate drivers stuck in traffic, the sounds of our environment orientate our lives and “liberates the profundities of atmosphere” (Norberg-Schulz, 2000, p. 161).

We are also familiar with the emotive potential of music to attune our moods (Zumthor, 2006, pp. 13, 20-21), and one need only watch a film on mute to appreciate the power of a particular score or composition in priming our affective states to that of the emotional scene we are viewing (Pallasmaa, 2014, p. 22). “This is surely the reason why Muzak is commonly used to create desired atmospheric moods in public spaces, shopping malls, and even elevators.” (Pallasmaa, 2012 [2010]-b, p. 242).

How a space sounds – both the types of sounds produced within it and the quality of said sounds – affects how the place feels. “Every building or space has its characteristic sound of intimacy or monumentality, invitation or rejection, hospitality or hostility” (Pallasmaa, 2008 [1996], p. 50). Unlike sight, sound is omnidirectional (a surfaceless space) – we hear not only in the direction we are facing, but sounds from behind, above, or to the side of us. We can even hear sounds from around corners, from other rooms and spaces that resonate in our imagination, creating images of probable sources.

The quality of the sound also renders an image of the space we are in – the sharp smacking of footfall from the stairwell speaks of solidity and mass, while the reverberating echo of distant voices, whispers to us that we are in a voluminous space. And just as we see the tactile values of a surface in the way that it catches and reflects the light, so “we hear the sounds it reflects and they, too, give us an impression of form and material.” (Rasmussen, 1964, p. 224).504

Sir Basil Spence considered the emotive potential of acoustics to be so important, that when he undertook the task of rebuilding Coventry cathedral, it was not just the form he wished to recreate, but its sonic atmosphere, testing hundreds of samples of plaster until he found one that resonated just so (Hall, 1990 [1966], p. 44).505

Of course not one of these sensations is experienced in isolation – each is dissolved into a synesthetic solution of lived-perception: “What is first and immediately perceived is neither sensations nor shapes or objects or their constellations, as Gestalt psychology thought, but atmospheres” (Böhme, 1993, p. 125). In the final analysis then, what matters is the feeling we have of something, someone or somewhere.

504 It has even been said that the materials and finishes of a particular vernacular are a reflection of the accents and cadences of the language spoken in that particular place (Conrads & Leitner, 1985).
505 A more recent example of the importance of acoustics as an atmospheric component may be found in the design of The Parc Olympique Lyonnais football stadium designed by Populous (London). The form, materials, and position of acoustic panelling is all designed to enhance the sound of the fans within the stadium and increase the clarity of the singing, while decreasing the noise emitted to the surrounding areas (Lintott, 2016)
Whether the place is perceived as warm and friendly or cold and austere, comes down to how the space has attuned us – the way in which the various generators come together to forge a particular atmosphere that is emotionally and synaesthetically perceived through our felt and feeling body (Griffero, 2014a, p. 32; 2014b, pp. 81-82).

An architect that designs without an understanding of synaesthetic perception or an empathetic appreciation of atmospheres may create structures which stand up against the weather but fail to enhance our lives. “It enabled a foot to walk but not to dance; an eye to see but not to envision; a hand to grasp but not to create” (Pérez-Gómez, 2016, p. 103): we are not touched by it (Corbusier, 1986, p. 153).

It is unsurprising therefore that many of the architects whose works are cited as exemplary of atmospheric architecture are also masters of materiality – such as modernist architects Ludwig Mies van der Rohe, Alvar Aalto, Frank Lloyd Wright, Sigurd Lewerentz, Sverre Fehn, Jørn Utzon, Louis Kahn, as well as more contemporary architects including Peter Zumthor, Steven Holl, Herzog and de Meuron, Tadao Ando, Decosterd & Rahm, Tod Williams Billie Tsien, to name a few (Pallasmaa, 2012 [2010]-b, 2013a, 2013b, 2014; Pérez-Gómez, 2016). Although the appearance, construction, and feel of their works may differ significantly, they are united in their proven ability to produce architectural atmospheres that are “conducive to the creation of appropriately tuned moods [...of] life-enhancing value.” (Pérez-Gómez, 2016, p. 22). Places that touch us arouse our emotions, and cause us to sigh this is architecture.
Chapter Five: A matter of making atmospheres (case studies)

Figure 43 – Tactual Imagery: entrance to the Schaulager, by Herzog and de Meuron
Source: author
[...] it is clear that the liberative importance of the tactile resides in the fact that it can only be decoded in terms of experience itself: it cannot be reduced to mere information, to representation or to the simple evocation of simulacrum substituting for absent presences.

- Frampton, *Towards a Critical Regionalism*
A visually-biased architecture is necessarily photogenic and aims to entice and entertain through its novel or otherwise spectacular appearance (Saunders, 2005). Such buildings are readily identifiable and their motives easily understood. But what of a Touching Architecture: a more-than visual architectural encounter that moves the felt and feeling body? How do we recognise these buildings? And how do the architects responsible create such affective atmospheres?

Through my research I have discovered three architectural practices in particular whose approach is often described as phenomenological, and whose works are frequently lauded as atmospheric: Herzog & de Meuron Architekten, Atelier Peter Zumthor, and Steven Holl Architects.

In what follows, I explore the “liberative importance of the tactile” in some of their most revered projects. In so doing, I draw upon my thesis of a felt-phenomenology in order to elucidate the ways in which these touching architectural encounters are realised (Frampton, 1985, p. 28).

I therefore pay particular attention to the architects’ process and design approach (conceiving and making), phenomenological and multi-sensory considerations (embodied experience of space and atmosphere), and how these ideas are explored and expressed through the considered composition of material, space, and light. Finally, I also look at the role played by their promotional images in each instance, and the degree to which they prime our sensory perceptions.

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506 Perhaps even “pornographic” (Barthes, 1981 [1980]), see Chapter Three
507 See chapter One
508 Hale notes for instance, that “[...] the potentially liberating power of a return to the fundamental principles of form, space and materiality [...] is] perhaps best evidenced in the buildings of phenomenologically inspired designers such as Peter Zumthor and Steven Holl and also the early work of the Swiss practice Herzog and de Meuron (Hale, 2016, p. 4). A similar claim is also made by Sharr (2007, p. 1)
509 This is not intended to be a canvassing of their architectural careers, but focuses instead on the specific buildings that the author has directly touched (and been touched by)
510 See Chapter Three
Herzog & de Meuron

Anyone considering the work of the Swiss architectural firm, Herzog & de Meuron (H&dM), may find themselves confronted by seemingly inconsistent styles and ideas – austerity/ostentatiousness, mass/lightness, solidity/fragility – often even within the same project. While this practice in contradiction may be “characteristic” of their approach (Herzog, 2001; Herzog & de Meuron, 2005c), it may be more readily described as “schizophrenic” (Moneo, 1999, p. 27).

Words less likely to come to mind include phenomenalological, atmospheric, or emotional. Yet it is precisely in these terms that Jacques Herzog and Pierre de Meuron describe their design approach (Herzog, 1994a, 1994b, 2006; Herzog & de Meuron, 2005a): what matters to these architects, “from a phenomenalological angle” is...

the touch of two bodies, the building volume and our own body, being touched in our own body and soul. [...] the immaterial, spiritual quality that is communicated to our senses through the material solidification. It is the indissoluble bond between material and immaterial characteristics of architecture that attracts us (Herzog & de Meuron, 2005b)

In a tone reminiscent of Baudrillard (2005 [1968]), Herzog talks about the way in which “the individual components which make up the architecture must come together [to] open up to the perception of the user or the observer as the multiplicity and sum of the potential convergences” (Herzog & de Meuron, 2005a). These components are phenomenalological, insofar as they “articulate[e] the richness and complexity
of phenomena [...] all the visual, auditory, tactile, and olfactory” properties (Herzog, 1998). All of which are felt with, in, and through the body – “where our perception as a whole is formed and is measured” (Herzog, 2006).

But “above all, [it is] the emotionally distinctive aspects [of architecture] that are of interest to me” proclaims Herzog (Herzog, 1997d). Which is to say, how the space touches us: the “immediate, visceral impact” (Herzog, 1997b) that it has to “affect people physically and emotionally before they are intellectually aware of what is going on.” (Herzog, 1994a). A sensation that is both subjective and objective (Böhme, 2017, pp. 25-26),\(^{511}\) and refers to the “ontological state of matter” (Herzog, 1994a).

This atmospheric sensation is the immaterial “reality of architecture” (Herzog, 1997c) that recalls embodied images of our past experiences (the creaking of the old oak door, the warmth of the hearth, the soft embrace of the old leather chair) coupled with their corresponding affective sensations (familiarity, cosiness, contentment, and so on) (Viray, 2006):

We all have experienced these different sensual perceptions in one single architectural location – seeing, touching, hearing – and have thought or at least felt that this is what architecture should always be. It should always express all these sensual moments and make them tangible. (Herzog & de Meuron, 2005b)

In designing particular emotive spaces, the work of H&dM “targets the imaginative world, the dreams and longings of people” (Herzog & de Meuron, 1997).\(^{512}\)

First impressions

The Dominus Winery (Napa Valley, CA), The de Young Museum (San Francisco, CA), and the Eberswalde Technical Library (Germany): three of H&dM’s most renowned buildings differing in form, material, context, function, location, and users. On paper, these projects appear as quite disparate designs, with little to link them aside from the architects’ name. On closer inspection, there are certain themes or concepts that recur in each: dissolution, ambiguity, and materiality.

An hour’s train ride north of Berlin, through open fields and countryside, lies the small industrial town of Eberswalde. From here it is a twenty minute walk down the road from the station to the Eberswalde Technical School Library building. The first impression, which “is always atmospheric” (Griffero, 2014b, p.

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\(^{511}\) See atmospheric perception discussed in Chapter Four

\(^{512}\) Such an approach suggests that the construction of a feeling is timeless in a way that fashionable formal expressions or gestures are not. This is why each design appears inconsistent with the style of its predecessor (or indeed, its neighbours)
is something close to disinterest – between the muted grey of the concrete and the faded blue of the glass, the building all but dissolves into the surrounding grey of the pavement and the faded blue of the sky. So subtle is its presence that it is only from within a proximity of about fifty paces that the building seems suddenly to materialise, with an abrupt sense of solidity that can catch the visitor quite off guard.

A sheer monolithic block with the occasional opening puncturing its surface, the building looks like some brutalist, concrete relic of state architecture, discoloured and stained with age and the weather. It is only as the visitor draws closer that the patterns etched into the surface of each panel reveal themselves – not just a mark, but a mark of something, deliberately illustrated and repeated in ribbons that stretch laterally around its form, like wrapping paper.

But unlike the playful primary colours or friendly icons of festive celebrations, this wrapping appears to be printed in halftone, like old newspaper print, with images of skulls, beetles, and the torsos of small children: photographs of newspaper clippings selected by Thomas Ruff. The images chosen were intended to represent particular themes from the history of human understanding (Mack & Liebermann, 2000).

But none of this is obvious from the street. At this level the images appear random and fragmentary. Less individual images than pieces of some larger abstract mosaic. Moving around the building only reinforces this impression, and the images seem to dissolve once more into the surroundings (in the reflection of the glass panels or the muddled gestalt of suburban camouflage offered by the shadows of the trees and damp water marks of the rain).

**Figure 45** – (Left) Urban Camouflage: the library building dissolves into the blue of the sky and the grey of the urban fabric. (Right) Material and Immaterial: solidity of building seemingly disappears in the reflection of the glass and the patches of rain washed concrete
Source: author

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513 From his own archive of over 2,500 such images collected since the early 1980’s
514 Technological progress, love and life, history, politics, architecture and science (Mack & Liebermann, 2000)
This wavering immateriality is nowhere more pronounced than in the glazed corridor (connecting the new library to the nineteen century administration building): here the visitor is confronted by the dialectical image of the courtyard beyond, the printed pattern on the glass itself (both sides), and their own ghostly image reflected back to them.

![Figure 46 - Dialectical Images: the sight of the printed glass façade superimposed with the ghostly reflection of myself and the landscape behind me, as well as the reverse of the printed glass panels on the otherside of the corridor, and the snowy courtyard space beyond](image)

Source: author

Such ephemerality could perhaps be dismissed in this urban context as a trick of the light, but how does dissolution occur with a much larger building?

North of San Francisco lies a long stretch of highway that bisects the vineyards of the Napa Valley region. A discreet turn-off carries the visitor over the train tracks and down a dusty trail running parallel to row upon row of uniformly spaced vines, like a regiment in strict formation. A small sign to the right confirms that this is the (private) property of the Dominus estate (“No tours. No tastings”), but there is no sign of the building.

It is only after passing the treeline that the building fades into view, and the effect is (like Eberswalde) strangely anticlimactic: from the photographs and descriptions in various architectural publications, there is an expectation of a large, precipitous wall of solid rock, like a grey ocean liner in a sea of green. Instead, its dark form seems to blur, and at certain angles it appears almost like a passing train rushing through the
countryside. The mottled surface of greys seems almost to flicker, as the light reflects of the faceted rocks behind an intricate latticework of steel wiring.

![Figure 47 - the taught wire frames supporting the vines creates a light haze at the base of the building, and the blurry sensation of motion. Source: author](image)

On closer approach the scale of the structure becomes apparent and the mass reasserts itself – thousands of individual lumps of basalt from the neighbouring valley piled thirty-feet high in cages of unseen depth. From this vantage point the whole structure could be formed entirely from stacked gabions.

At arm’s reach the rocks themselves become more distinguished and individualised: no longer a single grey smear, each block of basalt differs in form and colour from its neighbour – a pointillist render of grey, black, and white of course, but also muted salmon, sienna, and steel blue. There are even speckles of bright yellow lichen, and the occasional red-brown stain of rust.
Figure 488 - Homogeneity to Heterogeneity: on closer inspection colourful individual rocks emerge from the bland wall of grey stone
Source: author

Figure 499 - Kaleidoscopic play of light between gabions, polished concrete floor, and glass office walls
Source: Herzog and de Meuron (2005c, pp. 180-181)
Inside the entrance to the loading space the illusion of mass crumbles once more. The building is dark and cavernous, and the walls are little more than a foot deep – exposing themselves as not a solid homogenous mass, but a fragmentary and porous cladding, allowing light to spill through the gaps between the rocks. This sense of fragility reaches its climax in the corridor space on the first floor that separates the gabion wall from the offices. Here, for a few hours a day, sunlight pours through the façade and reflects once off the polished concrete floor, and again off the glazed outer wall of the offices, scattering the light and extending the suggestion of porosity to every surface.

A similar permeability is present at the de Young Museum. Unlike either the winery or the library, the museum does not disappear – the forty metre tall tower emerges high above the surrounding landscape and, like the watch towers of nearby Alcatraz, asserts itself as part of San Francisco’s iconicity. Like the V&A museum in London, the de Young was designed after a world’s fair\textsuperscript{515} – a spectacle for spectators. H&dM were commissioned after the Loma Prieta earthquake (1989) destroyed the original concrete building.

![Image](Figure 50 - Looming Large: Hamon Observation Tower of the de Young Museum defines the skyline of Golden Gate Park Source: author)

From a distance, the dark red form appears to be a large rectilinear brick building – reminiscent of Botta’s SFMOMA back down in the CBD, or H&dM’s initial restoration of the Tate, London. Unlike its bulky predecessor, this sense of mass is soon denounced, however, by the dull lustre of sheet metal. There is still a weightiness to it but not the density, more of a protective coating or armour than a robust and stalwart body.

In a similar manner to Dominus, the seemingly uniform exterior disintegrates upon approach and a porous surface – riddled with circular holes and indentations (concave and convex) – comes into focus. The dot-matrix patterns are reminiscent of the printed panels of Eberswalde, but here there is no ‘image’ to be

\textsuperscript{515} California Midwinter International Exposition of 1894
found. Instead the size and concentration of the openings appear random, as if the copper had been naturally corroded by the weather.\textsuperscript{516}

![Image of perforations and patterns](image1)

Figure 51 - Perforations and Patterns: approaching the copper skin of the de Young Museum
Source: author

As at Dominus, the entranceway is via a long, low opening in the wall, and the deep, dark shaded space within offers a welcome respite from the harsh Californian sun. Once inside, the fragility of the body beneath the armour is exposed and emphasised by large floor to ceiling ribbons of glass. Here again, the effect is not dissimilar to Dominus, though achieved by quite different means: the rocks at Dominus are heavy irregular forms, jumbled haphazardly together in a steel cage, stacked from floor to ceiling. At the Museum, each perforation is designed and arranged on the computer and cut with laser-precision.

![Image of two faced facade](image2)

Figure 52 - Two Faced: the precision laser-cut pixelated façade of the de Young Museum and the regularly stacked gabions of irregular basalt rocks at Dominus
Source: author

\textsuperscript{516} This pattern is actually a digitally pixilated abstraction of a photograph taken of dappled light passing between the leaves of trees. This is not something that can be readily inferred from the façade itself. Nor are the shadow patterns that are cast inside in any way reminiscent of a dappled canopy – even as projected ovals, the form and spacing is too perfect to be confused with organic irregularity. I am utterly unconvincing by the idea that this process has enabled “a key element in the atmosphere of the park [to be] transposed into the material of the building itself” in any significant or meaningful way (Herzog & de Meuron, 2009, p. 95). To the uninformed visitor, the pattern is simply a random collection of dots.
Tactful making (and other matters)

H&dM consider matter to be “the very essence [...] of architecture” (Herzog & de Meuron, 1997), and their work is often lauded by critics for the way it celebrates materials (Moneo, 1999; Schneider, 2003) – and, in particular, the practice of using common or standard materials in an uncommon or nonstandard fashion (K. W. Forster, 2003).

Material explorations are therefore an obvious starting point from which to develop their ideas. This approach also helps obfuscate the image of the building, deliberately delaying the impulse to design forms onto which materials are attached, and instead allowing the form to emerge naturally from the materials themselves.

The logic of the spectacle is thereby reversed: “crea[ing] forms that make material speak” (Ursprung, 2003b, p. 33). This interest in materiality is a consequence of the architects’ interest in phenomenology, “the physical and sensory experience” of architecture, and to consider each time what it is that “moves us, that enables us to encounter our own physical presence” (Herzog & de Meuron, 2005d).

Since touch is the test of reality, it is not surprising that the materials chosen for each project are incredibly tactile and textural, inviting the caress of curious cuticles, such as the porous and punctured copper façade of the de Yonge Museum, the temperature of which changes dramatically from surfaces in direct sunlight to those in shade (Fig. 51). Or the knobbly, craggy skin of the Schaulager ‘gatehouse’, with its smooth cold pebbles surfacing from beneath a rough sea of gritty concrete (Fig. 53). Even the hard surfaces of Eberswalde encouraged physical engagement, despite the cold (Fig. 45). For it is only through stroking the different surfaces – of glass and concrete – that the different techniques of image making are made corporeally explicit: application of matter in the former, and removal of matter (sgraffito) in the latter.517

The materiality exhibited by these structures – stone, concrete, glass and metal – would certainly seem to qualify as “hard” materials (those that resist the human imprint), and a quizzical scratch, knock or scrape of their surfaces confirms their obliviousness to the visitor’s presence. Leaving traces here – architectonics of use – are passively inhibited.

But this does not disqualify them as tactless, for in many respects they heighten an awareness of time, place, and my own “primitive presence” (Schmitz, et al., 2011, p. 249). This sensation is generated through

517 The Dominus Winery is less inviting. This apprehension is elicited by the steel latticework of the gabions, with their sharp, pointed ends, restricting easy access to the basalt, and seemingly restraining the rocks themselves like some caged, dangerous animal
518 Sommer (1974). See Chapter Four
another type of trace – *architectonics of construction* – that are immediately visible, indeed, tangible, for all to see (and feel). In fact this form of leaving traces of making, of its “mattering” (A. Benjamin, 2006), is something of a leitmotif in many of H&dM’s projects.

In 1998, H&dM were commissioned to design a *Schaulager* – literally, an exhibition-warehouse – by The Emanuel Hoffmann Foundation. The building would house surplus artwork from the Kunstmuseum Basel, with all the necessary climatic requirements for the purpose of conservation. The artwork stored should still remain accessible to the public (by appointment), but without the vast spatial demands of a traditional art gallery.

The resultant structure is essentially a large, beige polygon with a significant indent on one corner, painted white. This is the face that greets visitors as they step off the train at the “Schaulager” stop (*Fig. 55*).\(^{519}\) Situated on the border between an industrial estate of duty-free storage buildings and a smattering of three-story residential buildings, the Schaulager has an appropriately mongrelly appearance – the warmth and solidity of the housing stock but at the vast scale of a warehouse (*Fig. 54*).

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\(^{519}\) Not a coincidental name, the Schaulager is the only ‘destination’ here for non-residents
On an otherwise flat and uneventful landscape, the Schaulager looms large in the foreground, its massive bulk made all the more conspicuous by the foreboding shadow that stretches out across the buildings forecourt, over the road, and onto the train tracks. It does not simply disappear or dissolve into the urban landscape, nor does its sense of bigness\(^{520}\) diminish in anyway as the visitor approaches or wanders around the building (as it does with other projects). A slim but robust black metal fence circumscribes the entire site, with one large (locked) gate for deliveries and a small ‘gatehouse’ (seemingly guarding the entrance), providing the only access points (all under constant surveillance). The overwhelming sensation is one of impenetrability and fortification.

\(^{520}\) See Scott (1914)
The massivity of the structure is reinforced by the absence of apertures or openings. The only breaks in the otherwise uninterrupted surface, appear as slender tears or cracks in the fabric of the building itself. This was entirely intentional, as the architects explain: “the conventional right-angled [window] shape would not do. The earthy mass of the building called for a completely different solution, especially to prevent the entire weightiness and inertia that emanates from the structure as a whole from being undermined.” (Herzog & de Meuron, 2009, p. 82).

The form of these gnarly recesses has violent origins, emerging as it did from the physical crushing and contorting of copper cylinders (Fig. 62). This produced an organic and fractured appearance that appealed to the architects. Plaster casts were then taken of the cylinder and a three-dimensional scan was made of the negative cast. This would in turn produce the basis for a virtual form that would be digitally manipulated (to optimise the crumpled appearance) before being scaled up and milled out of polystyrene. Finally, each giant polystyrene negative was inserted into the exterior formwork, and the concrete mix was poured around it. The resultant apertures therefore retain the visible trace of the crushed copper cylinder (as well as the furrowed lines from the milling process), suggesting a forceful pressure being exerted by the surrounding structure.

Figure 56 - Crushed and Contorted: the formwork for the apertures were derived from a three-dimensional scan of a crushed copper cylinder
Source: author

A similar history of physical making may be empathetically read in many of the other architectural elements at the Schaulager, though at varying levels of abstraction. The large gloopy white surfaces of the ceilings and walls in the bookshop and café for instance (Fig. 57), seem at odds with the other interior finishes (exposed concrete slab, unfinished oak floors, and white plasterboard walls). But the form of this fluid plastic grotto is derived from the same copper cylinder model that generated the ribbon windows, albeit at a magnified scale. It is this combination of exaggerated form coupled with the very polished appearance that signals a significant departure from its forcibly crinkled origins: we have a very different tactile memory of plastic than we do from earth or metal. The former is light and brittle, while the latter possesses
a density and a degree of pliability. The appearance of these interior extrusions are not felt as those of the exterior apertures. The impression of “weightiness and inertia” is lost. As is the empathetic potential of its mattering.

A more successful effect may be found in the interior panelling of the lecture theatre and the steel cladding of the doors to the administrative wing and delivery area – these are indexical images taken from the exterior surface of the building itself (Fig. 57).

![Figure 57 – (Left) Captivating for Some: the shimmering blobby interior of the bookshop is generated from a scan of the ‘unrolled’ copper cylinder used for the apertures. (Right) Formal Introductions: the rough pebbled form of the gatehouse meets the undulating metal gates – the form of the latter forged from a frottage of the former. Source: author](image)

The exterior walls were created from a concrete mix that included the excavated earthworks (leftover from digging the foundations), mica (to discourage cracking) and a retardant. This meant that once the formwork was removed, the workmen would have an hour to chip away loose pebbles and other debris before it set. This is what gives the walls their rough, earthen finish – like freshly furrowed fields. Frottages were then created directly over the wall, before being removed and digitally scanned to generate the panels for the doors and walls elsewhere in the building. The walls are thus a rendered mattering of the ground on which the building sits, while the cladding and doors are forged from indexical images of the walls. Traces of traces (like the window surrounds).

521 These are tactual properties inherent to the material itself that we have learnt through active ‘hands-on’ manipulation (Katz, 2013 [1925]). Forms or surfaces presented visually are thereafter synaesthetically felt (Merleau-Ponty, 2005 [1945]). See Chapter Three

522 Originally the architects had intended to make the external walls entirely from earth. While this was proven to be technically feasible – after numerous studies at the Swiss Federal Laboratories for Material Testing and Research (EMPA) – it was decided that a cement mix that still “behaves like natural soil” would be prefferrable to dispel fully any concerns regarding the possibility of crumbling (Herzog & de Meuron, 2003 [2002]-b, p. 194).
This notion of translation or transposition is not limited to surface textures or formwork. At Eberswalde, the process begins with images. In this instance each photographic image – itself a visual documentation of a past presence drawn in light (photo-graphos) – was transferred onto glass and concrete panels. Creating the former was a relatively straightforward process of silkscreen printing – leaving an intentional additive trace\(^{523}\) – while the latter required a more refined development of traditional sgraffito techniques.

First, the photographs are printed onto a plastic film using a cure-retardant. These are then carefully laid into the formwork and the concrete is poured on top. When the concrete was set, the formwork was removed, and the areas that were in contact with the retardant were scraped away and washed out. The amount of material that gets removed from the surface depends on the amount of retardant used and the weather conditions (temperature and humidity) at the time that it is setting.

Consequently, each panel in a series is unique, despite the shared origins (Fig. 58). Thus, while the content of the engraving records a moment in history, the depth and clarity of the image that results may also be read as a record of the weather. Setting these two materials with their contrasting traces on top of each other reinforces the idea of stacking (echoing the stacked contents of the library), and heightens the material expression: the one, a transparent and reflective material, except for where the image is inked; and the other a smooth, light grey material, except for where the retardant has touched it.

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\(^{523}\) Something H&dM had already experimented with in previous projects, such as the Ricola-Europe Production and Storage building, where Karl Blossfelt’s 1920s photograph of a plant leaf was printed onto translucent polycarbonate panels.
The weather has also left its mark upon other works of H&dM – some fleeting and ephemeral, others more persistent and enduring. At the Grothe Collection (Bonn), a heavy downpour can create a shimmering mirror-like surface, transforming the opaque concrete walls “into an aquarium; firmness turns into fluidity; the impermeable becomes transparent” (K. W. Forster, 2003, p. 51). This effect becomes more accentuated in the Studio for Réme Zaugg (Mulhouse), where the iron dioxide within the concrete mix of the outer surface is washed out by the rain in bright streaks of rusty orange.

Figure 59 - “leav[ing] traces on the façade like tears on a face” (Herzog. 1998): rain runs down the concrete wall of the Ricola-Europe Storage and Production building (left). The less ephemeral “tears” of iron rust stain the face of Réme Zaugg’s studio wall (right).
Source: Herzog and de Meuron (2005c, pp. 32, 152)

The importance of traces as a design driver is perhaps most evident, however, in the design for the 2012 Serpentine Pavilion, which saw H&dM collaborate with the Chinese artist, Ai Weiwei. For the twelfth pavilion since its conception, the architects were faced with “the unavoidable problem of creating an object, a concrete shape” (Herzog & de Meuron, 2012a). In order to overcome this issue, they decided to create an object’s absence. Their proposal was to “use the traces” left on the site from the bodies of their eleven predecessors. “All of these traces [...] will now be revealed and reconstructed.” (Herzog & de Meuron, 2012a).

Figure 60 – (Left) Retracing the Serpentine Pavilions: cork covers the various remains of the past projects at H&dM’s 2012 Serpentine Pavilion.
Source: author.
(Right) Building Up and Down: diagram showing the various levels and layers of excavation and construction – (from left to right) pavilion roof; traces of previous pavilions; excavated foundations; cuts for circulation; twelve specific columns for twelve pavilions past; landscape; cork; pool
Like an archaeological site of investigation, the architects dug down five feet into the ground, revealing the remains of foundations, backfills, and telephone cables. By making tangible a topology of superimposed landscapes from projects no longer visible, they also evoke memory traces: returning visitors (familiar with pavilions of previous years) will “try to read the traces. They’ll somehow reconstruct history or memory, trying to remember what they’ve seen here [...] It will help people to remember their own lives, which I think is a nice idea for architecture.” (Herzog & de Meuron, 2012b).

Ambiguity and imagery

The eclectic oeuvre of H&dM has certainly limited their branding potential, and they readily admit that having a recognisable style or formal language would make it easier for a practice to establish themselves in the market. But firms with a branded form or appearance face other difficulties, and the work of many iconic “architects [has] suffered because they were predefined by their style and had to carry it with them like ‘hunchbacks’.” (Herzog, 2011). These buildings “become either boring, individualistic stylistic exercises or tourist attractions.” (Herzog, 1994b).

H&dM maintain that they “are absolutely anti-representational” (Herzog, 1997b), embracing instead a more “conceptual approach” (Herzog, 1994b). Part of this approach involves actively avoiding architectural “surrogates” (Herzog, 1997a) or visual “quotations” (Herzog & de Meuron, 1997) in the early stages of design, and focusing instead on creating pictures.

These “pictures” – sketches, concept models and material samples – are left deliberately incomplete and imprecise. Consequently, the architects often find themselves “in a state of constant uncertainty, which also implies an openness.” (Herzog, 1994b). Like a Rorschach image, it is this openness that affords an imaginative empathetic perception and a different perspective or approach to emerge each time (Zaera, 2005). They act as “catalysts of our ideas [...] opening a door to a different picture, a different idea, a different architecture” (Herzog & de Meuron, 1997).

This is why H&dM resist the urge to enter into virtual modelling too early: “It is sometimes unbearable to see a project that is virtually finished, as if it were already built and changes can no longer be made.” (Herzog, 2006). To them, “the computer is the accomplice of [...] mediocrity,” as Herzog explains…

Once the pictures and information come up on the computer screen, it’s very hard to oppose them. That is, it’s hard to distinguish the computer, as a purely technical aid, from its influence as a device

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524 For an extensive discussion of memory and traces, see Ricoeur (2004)
525 See for instance, jury response to a competition entry by Libeskind (Libeskind, 2004) and the expectations Gehry was confronted with for “Gehry buildings” (Jencks, 2005, p. 9). See Chapter One.
that is not only very seductive but also levels everything out and therefore encourages the mediocre (Herzog, Wall, & Ursprung, 2004)

The early charcoal sketches of Herzog for instance offer a way of visualising and working through ideas.526 These drawings are not careful or delicate illustrations, but a record of “the artist conceiving: a shudder of lines, the inception of dabs and spots of a building to be born, some to be aborted” (T. Vischer, 1997). An assortment of soft lead strokes, varying in thickness, fluidity and deliberation. It is all of these “distinctly sensual qualities” that “lend the drawings their plasticity and spatiality” (T. Vischer, 1997).527

![Figure 61 - The Artist Conceiving: early concept sketches of the Dominus Winery
Source: T. Vischer (1997)](image)

While sketches can be useful, most of the atmospheric communication takes place through modelling and material investigations. These are not refined or polished presentation models that “are intended to target a specific public, to make the building look attractive to the contractor” – those sorts of models are “usually annoying and embarrassing,” failing to convey any of the proposal’s sensory phenomena beyond the visual (Herzog, 1995).528

Working models, on the other hand, function like charcoal sketches, but with spatiality or materiality to boot: they “have an aura that is much more effective in communicating the architectural idea than a perfectly detailed replica” (Herzog, 1995). “These objects,” continues Herzog, “are not works of art; they are an accumulation of waste” (Herzog & de Meuron, 2003 [2002]-a, p. 74). Waste that would remain

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526 Herzog also worked as an artist during the firm’s early years when work was slow (1979-1986)
527 See Chapter Four
528 Herzog dismisses such work as “bonsai architecture” (Herzog, 1995).
“lifeless [...] were it not for the special [empathetic] gaze [...] of the interested beholder who is able to interpret and interrelate the moulded shapes, grooves, indentations, and discolouration,” giving meaning to what they see (Herzog & de Meuron, 2003 [2002]-a, p. 74).

This ‘waste’ is preserved in a number of sarcophagi within the office’s cellar – tombs filled with the corpora of past projects: “fragments, rejects [...] objects that have allowed ideas to pass from hand to hand [...] Some of them are ugly and makeshift, others are stunning in their beauty” (Ursprung, 2003b, p. 36). Each fragment is the embodiment of thousands of hours of thought and consideration, a physical documentation of a project’s progression (Herzog & de Meuron, 2003 [2002]-a).

It is indeed curious that within an architectural system where “the representation of the work in photographs has become just as important as, if not more important than, the building itself” (Böhme, 2003, p. 399), so many of H&dM’s buildings should be so “unphotogenic” (Ursprung, 2003b, p. 32). This can often pose a challenge for photographers and architectural tourists.

When it came to photographing the House Along a Partition Wall (Basel), for instance, the narrow site proved so physically restrictive that Ruff had to resort to photographing the model instead, reasoning that architecture is irreducible to a single physical building, and that “models are an autonomous element in the oeuvre of Herzog & de Meuron.” (Ursprung, 2016, p. 19). The architects remain unfazed by this ‘problem’: as Herzog explains, “we have never developed buildings and projects with a view to their medial communicability; there was never a design strategy of that kind.” (Herzog, 1995).

But this does not mean that the architects do not care about the appearance of their work or how it is represented. On the contrary, they are well aware of the fact that “each architect’s presentation

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529 See also Riley (1999)
communicates insight into architecture not so much through the images presented of this architecture, but through the presentation itself” (Herzog, 1997c).

This is why, when H&dM were asked to represent their home country at the International Exhibition of Architecture at the Venice Biennale (1991), they approached four photographers active in the world of art to capture their work in photographs. The intention was twofold: to demonstrate the subjectivity of perception – that everyone has their own perspective on the world, and may ‘see’ the same object differently – and to discover which of these approaches created an aesthetic most analogous to that of the architecture itself.

Ruff has a distinct approach but an indistinct style, something that resonates with the way H&dM work (Herzog, 1995; Mack & Liebermann, 2000). The various techniques employed by Ruff often result in photographs of the same subject matter that feel quite different, “that might be understood as different

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530 Balthasar Burkhard, Thomas Ruff, Margherita Krischanitz and Hannah Villiger. Another artist, Jeff Wall, was also invited but declined
ways of looking at things, that is, one has the feeling that different photographers took these pictures.” (Herzog, 1995).

Instead of seeking out expressive or provocative perspectives, Ruff seems more interested in exposing the opposite – the banal or prosaic aspects of life and architecture. Ruff’s “aim is not to capture images selected from the fullness of reality but rather to construct them” (Ruff & Ursprung, 2003, p. 159). The subjects themselves are nevertheless treated “with the kind of care that portrait-painters of old used to reserve for high-ranking individuals.” (Mack & Liebermann, 2000, p. 30). The images that develop “fragment the everyday world, singling out an element […] so as to reveal its specificity, its materiality.” (Mack & Liebermann, 2000, p. 30).

Wall too, shares this affinity for capturing “the unimpressive”: not the ‘best side’ of a face (building or person), taken in the best light, with the fewest distracting elements, but “the actual environment in which we live” – the perfect with the imperfect, the vernacular of the real (Herzog, et al., 2004, p. 25). Wall’s photographs of the Dominus Winery not only aim to expose “the relation of the building to the wine” (the materiality of the land, the vineyard, and the architecture) (Wall, 2003 [2000], p. 65), but to do so in a way that “launches desire beyond what it permits us to see.” (Barthes, 1981 [1980], p. 59).

By including the circular vignette in his photographs (usually cropped out in the transference from a circular lens to a rectilinear film), the viewer becomes distinctly aware of the limits of representation – that there is more here than what is seen (Fig. 64); “something not visible” (Wall, 2003 [2000], p. 67). This is because “there can never be a way of completely understanding what a building (or any other thing) is like, in real space, by means of photography” (Wall, 2003 [2000], p. 67); something often forgotten by viewers and denied (or at least ignored) by photographers.

Rather than attempting to overcome the ‘limitations’ of visual representation, H&dM make them explicit, in order to make the viewer aware that their architecture is more-than visual, “that [it] speaks to people through all their senses” (Herzog & de Meuron, 2012b); a photograph of something that we have no direct sensible experience of is a sensorial abstraction – “a beautiful promise and a stale substitute” (Kudielka, 2003, p. 288). Indeed, “to attach little importance to the physical ‘perception’ of Herzog & de Meuron’s buildings patently disdains the core of their aesthetics.” (Kudielka, 2003, p. 288). What matters – what they want their promotional images to acknowledge – is the fact that the embodied “on-site experience of the
building, direct confrontation with it, is essential [...] In fact, that is architecture’s only chance of survival.” (Herzog & de Meuron, 2003, p. 82).\textsuperscript{531}

\textsuperscript{531} A sentiment shared by Ando (1995).
From across the muddy turnip fields the Bruder Klaus Field Chapel appears as a solid beige block, like a solemn stone cenotaph in some long forgotten battlefield. A narrow gravel pathway breaks off from the dirt track that runs along one edge of the field, leading the visitor to a large, silver triangle at the base of the monument. A rather meagre latch a third of the way up provides the only suggestion of a doorway.

Once inside, the cavernous space offers some relief from the driving winds. There is little warmth to be found inside, however; the large tear-shaped oculus in the centre of the space provides more than adequate access for the German winter weather (Fig. 68). A small pool of frozen rainwater lies beneath it, glazing the poured lead floor, as if the cold had frozen both. The walls incline upwards to this aperture and invite the visitor further in to the centre, to stand tall beneath it and breathe deeply, sharing the feeling of expansion with the space.

It is through this opening that natural light enters into this smoke blackened void. The roughness of the concrete walls is accentuated by the shadows that cling to the crumbling, pitted surface – under pebbles and beneath overhangs – only to be periodically washed away by the light radiating from the smooth glass orbs that glisten on the surface, like dew-drops on grass.

A solitary wooden bench appeared as both a rare moment of warmth in an otherwise cold, hard space, and as a welcome respite after the six kilometre trek from the nearest train station (Satzvey). Beside the bench is small metal trough filled with a fine white sand. The surface of the sand is punctuated with little dark spots – the burnt out remains of yellow beeswax candles. Lighting a few more does little to raise the temperature, but the gentle flickering glow and the dull scent of beeswax somehow make the space feel a little warmer. Not homely, but less bleak.
The atmosphere here is largely constructed from traces (Fig. 67): outside footprints of various visitors (people, birds, dogs and rabbits) have left their impression in the dense earth; the exterior of the building appears as wavy stacked bands of rammed concrete – a remnant of the formwork and the process of periodic pours; inside, the rough concrete channels are indices of the tree trunks that created the internal formwork, long since burnt out; the gloopy lead on the floor retains the form of its once liquid state; and even the bronze bust of the mystic, Bruder Klaus (Niklaus von Flüe), visibly recalls the materiality of its becoming (mattering). Traces of time and meteorology are also evinced in the small pools of ice on the
ground (from an earlier rainfall and this morning’s frost), the dark waxy remains of spent candles, and the sharp shard of sunlight that scrapes across the interior.

Figure 68 - An Architecture of Traces: (left to right) footprints in the earth outside; puddle of once molten lead; striated concrete reveals process of construction; the bronze bust of Bruder Klaus and the channels of burnt out tree trunks left behind
Source: author

Figure 67 - Eye to Eye: looking up at the tear-shaped oculus (glass orbs scatter specks of light around the interior)
Source: author
The Pritzker Prize Laureate, Peter Zumthor is often cited as an architect whose works deal with atmosphere, materiality, and embodied perception. This is perhaps because he is one of only a few practitioners who write about their work in terms of the phenomenal experience. In fact, Zumthor readily identifies the sole objective of his work as the creation of affective atmospheres (Spier, 2001, p. 19). Which is to say, “quality architecture [...] move[s] me” (Zumthor, 2006, p. 11); that has the “ability to touch us” (Zumthor, 2006, p. 21).

Zumthor explains that atmosphere and our affective states are communicated “visceral[ly]” through our felt-body (Zumthor, 2006, p. 77): “we perceive atmosphere through our emotional sensibility,” as a “feeling [...] something inside us [that] tells us an enormous amount straight away.” (Zumthor, 2006, p. 13).

Zumthor maintains that this atmospheric approach is more meaningful and sustainable than any desire to create the elaborate forms or expressive gestural spectacles of some of his contemporaries. These starchitectural icons “aren’t well made [...] and It annoys me to see how badly the buildings age, how badly they’re finished. But what mainly disturbs me about such buildings is the showing off.” (Zumthor, 2008, p. 154). And to what end? What do such spectacles achieve when “everything merges into everything else” and “[a]rbitrariness prevails”? (Zumthor, 2010 [1998], p. 16). Such novel architainment “may be able to convey a message, [but] as soon as we understand its statement our curiosity dies and all that is left is the question of the building’s practical usefulness” (Zumthor, 2010 [1998], p. 12).

Alternatively, “if you create the kind of atmospheric qualities, or soulful qualities, that I am after, they’re of course much deeper or longer lasting, and somehow also more open to life” (Spier, 2001, p. 22). In order to achieve this, it is important to “reach beyond signs and symbols” to what Zumthor calls, “the magic of the real” (Zumthor, 2010 [1998], pp. 17, 83).

In a statement that has clear phenomenological undertones, Zumthor calls for an “architecture that sets out from and returns to real things” (Zumthor, 2010 [1998], p. 32). This emphasis on the reality of things may be understood as an emphasis on the corporeality of things. This is because “architecture is always very physical” (Zumthor, 2008, p. 154); “always a concrete matter” (Zumthor, 2010 [1998], p. 66) of what’s

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532 In the introduction to Zumthor’s Atmospheres, Brigitte Labs-Ehlert assures us that “Words like atmosphere and mood invariably come to mind when faced with Zumthor’s architecture; the perfectly tempered feel of his built spaces is immediately communicated” (Zumthor, 2006, p. 7). For similar references, see Borch (2014); Griffero (2014b); Leatherbarrow (2015); Mallgrave (2011, 2013a); Mindrup (2015a); Pallasmaa (2009, 2012 [2010]-b, 2015b); Pérez-Gómez (2016); Sørensen (2015); and Ursprung (2009).

533 See also Zumthor (2006, p. 19)

534 Echoic of Husserl’s call for a return to the things themselves: “Wir wollen auf die ’Sachen selbst’ zurückgehen” (Husserl, 2008 [1913], p. 168). For a discussion of the relationship between Zumthor and Heidegger, see Sharr (2007, pp. 91-114)

535 See Chapter Two
really there, really felt, “[a]nd for me that means directness.” (Zumthor, 2008, p. 154). Thus, “to experience architecture in a concrete way means to touch, see, hear, and smell it” (Zumthor, 2010 [1998], p. 66).

One of the consequences of this return to the reality of things (themselves), is a lack of material pretence - everything appears as it is: “by this I mean that there is no facing, no cladding, and no over-painting. The dematerialisation of surfaces [...] has been avoided.” (Zumthor, 1998, p. 214). What you are left with “is exactly what we see and touch, exactly what we feel” (Zumthor, 1998, p. 214). This exposure of matter is emphasised by a reduced material palette. The Bruder Klaus Chapel is predominantly rammed concrete, with a touch of lead, glass, and brass. Similarly, Zumthor’s Shelter for Roman Archaeological Ruins (Chur, Switzerland), consists of a frame built almost entirely from timber, with the odd steel accent (such as the doorway, the internal walkway, and the oversized skylights). And at Zumthor’s most celebrated project, the thermal baths at Vals, the list of construction materials is fewer still: gneiss stone, concrete and glass.

But this seemingly frugal material diversity does not equate to an impoverishment of materiality. Instead “you take material and then you develop a repertoire” (Spier, 2001, p. 19). In the case of Vals, the finishes of the same stone “range from polished, sandpaper grading 500, to sawn, chiselled, and the way it comes out of the quarry – split [...and] another finish is called gestockt, which is made with this hammer which has a special pattern” (Spier, 2001, p. 19).

Moreover, the atmosphere of these spaces is not simply constructed from the contents of the quantity surveyors workbook, but extends to the immaterial components – “quasi-things” [“Haldbinge”] (Schmitz, 2014, p. 39) – such as the climate, sounds, smells, light, context, and (in the case of Vals) water. It is the combination of these material and immaterial components that animate the space, revealing that the true strength of Zumthor’s architecture is not in its immediacy (though the first impressions are indeed compelling), but in the emotional durability of the atmospheres (Chapman, 2005). This sense of endurance is not born from any suggestion of stubborn permanence or fixity, but from the changeable nature of these atmospheric variables – constantly tincturing the feel of the spaces in the process.

Blurring boundaries

Many of Zumthor’s projects possess a strong sense of belonging to the place in which they are situated, and this in turn bestows a sense of timelessness on the architecture, “communicating the feeling [...] of always having been in this landscape” (Zumthor, 2010 [1998], p. 156). This is the feeling that Zumthor actively seeks in his work, and herals as the greatest indicator that “you have reached some sort of rapport

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536 See also Hauser and Zumthor (2007, pp. 24-28)
537 Sociocultural, historical, geographical etc.
538 Zumthor lists the three primary ingredients of Vals as stone, water, and mountain (Hauser & Zumthor, 2007)
between place and building.” (Spier, 2001, p. 16). This is why the architect always starts with the site: to get a feel for what already exists and what could yet be built that would positively “contribute to the atmospheric density of a place” (Zumthor, 1998, p. 9).

“Place fascinates me.” Zumthor explains, “I love devising spaces whose form and atmosphere perfectly match their use.” (Zumthor, 2014a, p. 11). This notion of ‘matching’ is not one of direct visual resemblance, whereby certain styles or decorative motifs are replicated in order for the building to disguise itself within its surroundings. Instead we find something more akin to an analogue version of nonstandard seriality, where the sense of similarity comes less from a formal vernacular, than from the choice of local materials, craftsmen and construction techniques.539

At Caplutta Sogn Benedetg (St. Benedict’s Chapel), for instance, the decision to use timber puts it instantly at odds with the ninety or so more traditional churches and chapels sprinkled throughout the Graubünden region: bright white plaster Baroque structures from the Catholic Revival, with heavy masonry walls, a few bulky deep-set windows, and a pitched roof of grey shingles.540 Looking at St. Benedict’s – with its tear-

539 “A nonstandard series is not defined by its relation to the shape of any individual item in it, whether round, or square or formless […] but must also be to some extent similar insofar as certain design parameters and technical processes that were used to make them leave a trace that is detectable in all end products.” (Carpo, 2005, p. 100). For a variation, see also Carpo (2008).

540 For more on churches and chapels in the region, see http://kirchen-online.org/kirchen–kapellen-in-graubuenden-und-umgebung/index.php
shaped footprint, light timber frame, shallow roof and ribbon of clerestory windows – locals could be
forgiven for not necessarily recognising it as a chapel. Indeed, in this context a timber structure is more in
keeping with a residential or agricultural than a secular archetype. But being built for and “by local people
born into the heritage of building with wood” (Zumthor, 2014a, p. 63), it soon settles into its place (Fig. 69).

The rough-hewn larch shingles, frayed and feathery in appearance, do not adorn the roof – as with other
chapels – but cascade down the walls, seemingly cloaking the exterior against the cold mountain chill. Their
deliberate and careful application belies any notion of rustic primitivism or crudity, and like the Maori kahu
huruhuru, this crafted covering gives it its sense of reverence.

This feeling is even more pronounced on the inside. The attention to detail is as evident in the joinery of
the parquet floor as it is in the boat-like framing of the ceiling, where each of its thirty-seven rafters splay
out to meet neatly meet their vertical counterparts. These long timber studs shoot down past the floor and
into the foundations, seemingly without touching the walls or floor, furthering the impression of lightness
and delicacy. Even the pews exhibit this same Quaker-like penchant for refined austerity. Old yet new,
traditional yet contemporary, reverent yet welcoming and intimate.
But the chapel is by no means the only example of this sensitivity to place, material, and construction. Therme Vals was intended to translate the “sensuousness” of “mountain, stone, [and] water” into architecture (Zumthor, 1998, p. 156). The result is a building that appears to be carved into, or quarried out from, the mountain itself. The gneiss stone that covers nearly every surface is sourced from a quarry a kilometre further up the valley, while the water that fills the pools comes from the adjacent natural hot spring (some 30°C). “Material and construction have to relate to the place, and sometimes even come from it.” (Zumthor, 2010 [1998], p. 100), explains Zumthor, and Therme Vals is certainly testament to that.

Another way in which Zumthor’s buildings develop a sense of belonging is through the different temporal narratives that are woven into the fabric of the building through the architectonic traces of construction and use (Hale, 2014a, 2015).

Vals, for instance, has an innate temporality embedded within the gneiss itself. A metamorphite, the gneiss rock is the product of intense heat and pressure over millions of years, a process that is responsible for its particular appearance – the white ‘eyes,’ the shimmering mica, the delicate tributaries of veins, and the innumerable shades of grey-green-blue. The gneiss is an expression of what Adrian Stokes referred to as “concreted Time” (Stokes, 1978, p. 196): “the ‘stoniness’ of stone is but one aspect of its impression. The senses, hardly less than the intellect, can be aware that all minerals, all elements, are contained and concreted in stones” (Stokes, 1978, p. 190). If there is an impression of timelessness, it is because the age of this material is beyond comprehension in the everyday sense of an old building or material.

Within the spa, the visitor’s temporal awareness is dulled – there are no clocks on the walls to tell the guests to hurry up, and the few timepieces that are present are discreetly embedded into the ends of two brass posts that may easily go unnoticed. Zumthor originally intended the spa to have no clocks, but after pressure from the client and guests within the first two months, relented with this subtle compromise.
sunlight as it spills down between the slots in the roof segments and softly slides across the surrounding stone surfaces, like an ancient gnomon. Outside, guests may even catch the faint tolling of bells from somewhere down the valley, a rural reminder of hours passing.

A similar effect may be found at St. Benedict’s. Here the “latent warmth [and...] time” of “a material that has being” is clearly exhibited in the grain and knots of the timber (Baudrillard, 2005 [1968], p. 38). The clearstory window creates a dramatic slice of sunlight that threatens to bisect the congregation as the day passes. The unfinished timber floor is also a tactful material that records and exhibits traces of use from the past footfall of devout locals and architectural tourists.

Time has also left its mark on the exterior as well. Like other timber buildings in the area, it has silvered on the northern side and begun to blacken on the south, as the process of weathering reinforces its connection to the surrounding landscape (Fig. 70). Even the chunky brass door handle displays the dull lustre of patina. This, Zumthor admits, is all part of the atmosphere of life, one that includes signs “of age on materials, of innumerable small scratches on surfaces, of varnish that has grown dull and brittle, and of edges polished by use” (Zumthor, 2010 [1998], p. 24). All of these traces are but a corporeal manifestation

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543 As Stokes again reminds us, weathering “is the natural carving that records Time in immediate form with the pattern and colour of surface” (Stokes, 1978, p. 200). See also Mostafavi and Leatherbarrow (1993)
of “a deeper feeling – a consciousness of time passing and an awareness of the human lives that have been acted out in these places and rooms and charged them with a special aura.” (Zumthor, 2010 [1998], p. 26).

A new building “needs something like ten or twenty years before it’s really nice [...] it needs these traces of different users” (Spier, 2001, p. 24). It is therefore only with time that “a good building” may emerge: one that “is capable of absorbing the traces of human life and thus of taking on a specific richness” (Zumthor, 2010 [1998], p. 24).

A sense of time and place are perhaps most clearly expressed, however, in the Shelter for Roman Archaeological Ruins, and at the Kolumba Art Museum (Cologne, Germany). Both of these projects begin by straddling the ruins of much older buildings that already emit “a profound historical aura” (Zumthor, 2014b, p. 165). The traces of “age-value” here are preserved and, in the act of covering, demarcated as something worthy of protection.

At Kolumba, none of the original bricks are removed and the new walls are integrated into the old so that (where possible) the original walls transcend the status of decorative nostalgia by also assuming a loadbearing function (Zumthor, 2014b). The decision to continue using brick as the facing material is in keeping with both the original church ruins and much of the architectural heritage in the area.

The temporal distinction between the two is maintained through the appearance of the brickwork itself: the old red-brown bricks of the original walls look rough and worn, are inconsistent in dimension, and vary in bond throughout. The new “Kolumba brick,” by contrast, is a much lighter grey/off-white brick designed by Danish brickmaker, Christian Petersen. Unlike the traditional red-bricks, these are long-thin slabs, divided by a mortar course of half their height (18mm), which creates a strong stacking impression, like that of Vals. But unlike Vals, the depth and mass of the walls is not imposing, an effect produced by the numerous perforations which add a touch of playfulness and fragility to the structure, as it appears to dissolve between the ruins and the gallery spaces above (Fig. 74).

After entering the building the visitor transcends into the excavated site via a large leather curtain, and the immense volume of the space is suddenly revealed. The sense of lightness is reinforced once more by the fourteen slender conical foundations that shoot through the space (to support the gallery floors twelve

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544 What I have previously referred to as character.

545 Without the structure at Chur for instance, one could easily imagine walking past the ruins without paying them any mind, only for it to become further eroded by wind and rain, and eventually becoming reclaimed by the landscape. And Riegl notes, “as decay progresses, [the affective potential of] age-value becomes less extensive [...] evoked less and less by fewer and fewer remains [...] A shapeless pile of rubble is no longer able to convey age-value; there must be at least a recognizable trace of the original form, that is, of man’s handiwork” (Riegl, 1982 [1903], pp. 32-33)

546 On nostalgia, authenticity and the myth of origins in the generation of architectural atmospheres, see Baudrillard (2005 [1968], pp. 77-81)
metres above), and by the vast amount of light and sound that pours into the space from the busy city beyond. This helps maintain a feeling of being present in your own time whilst being transported to the time of the ruins.

Haptic images (from the inside-out)

For Zumthor, *forms follows atmosphere*. This “inside out” approach means that the external appearance of his projects are often ones that were unimaginable at the beginning (Zumthor, 2006, p. 71). “Form is not something we work on,” explains Zumthor, “I think form is the easiest to control, it can be done at the end.” (Zumthor, 2006, p. 71; 2013). One consequence of this, is that a strong threshold condition is

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547 This temporal differential is accentuated in Kolumba, by the sound of pigeons past: in 1994, Bill Fontana recorded *Pigeon Soundings*, an 8-channel sound map of the flocks of pigeons that had occupied the ruins prior to the museum’s construction. Today these same sounds of cooing and flapping – sonic traces – are played from eight speakers located throughout the site though the pigeons themselves have long since been evicted (http://www.resoundings.org/Pages/pigeon_Soundings.htm). For an overview of Fontana’s relocated sound projects, see Fontana (2008)

548 This is also the case at Chur

549 (Danuser & Gantenbein, 2009, p. 33; Zumthor, 2014a, p. 12; 2014b, p. 40)
developed— a very definitive sense of passing from outside to inside, two very separate experiences (Zumthor, 2008, p. 153).

These moments are often brief but effective, such as at the entrance to the Shelter at Chur, where four steel steps project out from the door, stopping short of touching the ground, emphasising the separation and forcing the visitor to bridge the gap. This brief ascent is covered on all sides in the same dark steel as the steps, reducing peripheral perception as you move through, enclosing the body in a quickly darkening alcove. Once through the door, the space opens up again dramatically, and the interior feels significantly lighter as a result.

Similarly, at the entrance to St. Benedict’s, five concrete steps project out from the doorway to greet the weary traveller. Here again, there is a brief antechamber that postpones the moment of entering the modest nave. The intervention is simple but effective—the modesty of the space is ignored, and now feels comparatively expansive (twice the height of the antechamber) and light.

Another technique for suspending the full apperception of the project can also be found at Vals and in Zumthor’s design for the 2013 Serpentine Pavilion (London). Both projects employ the “zipper principle” (Hauser & Zumthor, 2007, p. 82) of staggering spaces so that the visitor must move through, across, and around spaces in order to discover them.

At Vals, the procession down to the central atrium (‘indoor bath’) space involves a gradual descension along a gently sloping floor that runs perpendicular, so that guests are never walking directly towards the

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550 The chapel is located about an hour’s walk from the Sumvitg train station up fairly steep hillside.

551 The compression-expansion effect is heightened further still by the fact that the fairly wide opening to the nave (nearly three meters) is divided by two studs at equidistance, so despite being able to see this large space, the visitor still has to pass through this relatively narrow opening before they can feel relaxed again and expand into the space.
atrium until they reach the lower level. Other enclosed spaces, such as the ‘cold bath’ and the ‘shower stone’ rise up between the ramp and the atrium, obscuring the line of sight, and granting only fleeting glimpses of the indoor bath. Only after passing between the walls of the ‘cold bath’ and the ‘shower stone’ is the guest able then to step into the water of the pool itself. Even from this vantage point, direct views out to the valley through the full height picture windows (only a dozen steps away) are still denied, and the guest must leave the pool once more and head across to the loungers\textsuperscript{552} in order fully to appreciate the view.

At the Serpentine Pavilion this effect is concentrated to its essence: exterior, interior, and the transition space between the two – three separate, sequential acts. Standing in Kensington gardens, the large, dull black walls of the exterior suggest little of what lies beyond. Entering through one of the six openings in the exterior leads the visitor through to a dark, narrow corridor. In this brief moment of darkness, the nonvisual senses become momentarily heightened. Out of the summer sun, the relative coolness of the space is palpable, and the hectic sounds of city gradually fade, like the light, with every step. There is a sudden sense of relief as these various stressors (heat, noise, and sunlight) melt away.

The visitor is compelled to continue onwards, however, by the slender dimensions of the space and the intrigue offered by the sight of another opening further down on the opposite wall. This one opens out to a different environment again: bright sunlight, colourful pastural flowers, the faint aroma of these mountain flora, and the scent of coffee (emanating from the small mobile stall in the corner).

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure76.png}
\caption{Visual Hapticity: (left to right) the long corridor offers a moment of quiet seclusion in the shade; detail of stained wooden bench resting on hessian scrim; ropey texture of building skin}
\end{figure}

Source: author

The sounds of the city seem far away without their visual cues – this centripetal courtyard space limits the view to that of the miniature meadow and the black wall behind or up to the open sky (Fig. 77). Resting on the low wooden bench that protrudes out from the walls, the visitor may lean back and feel the textural

\textsuperscript{552} Recliner ‘Valserliege’ (1996) also designed by Zumthor
surface – a combination of black Idenden\textsuperscript{553} and rough hessian scrim – warm in the sunlight and cool in the shade.

Another consequence of Zumthor’s inverted design strategy, is that each space is conceived not in terms of traditional typologies (living room, dressing room, bedroom etc.), but as individual scenes or “images” with their own particular qualities that combine to form part of a larger composition of movements. As Zumthor explains, “when I think about architecture, images come to mind.” (Zumthor, 2010 [1998], p. 7):

[...] images of places that I know and that once impressed me, images of ordinary or special places that I carry with me as inner visions of specific moods and qualities; images of architectural situations, which emanate from the world of art, of films, theatre, or literature. (Zumthor, 2010 [1998], p. 41)

\textsuperscript{553} A polymer emulsion traditionally employed as a vapour barrier coating for pipework (Ventura, 2014)
These are not optical images comprised of merely shapes and colours, but haptic images forged from embodied encounters past. The image of his aunt’s kitchen, for instance is recalled as a synaesthetically felt-atmosphere, that has since become “insolubly linked with [Zumthor’s] idea of a kitchen” (Zumthor, 2010 [1998], p. 8):554

a world of different moods and smells […] the sound of gravel under my feet, the soft gleam of the waxed oak staircase, […] the sound of] the heavy front door clos[ing] behind me […] memories like these contain the deepest architectural experience that I know. They are the reservoirs of the architectural atmospheres and images that I explore in my work (Zumthor, 2010 [1998], pp. 7-8)555

Once imagined, the next step is to express outwardly these inner images on paper with coloured pencil, watercolour paints, and charcoal. These visualisations help Zumthor “to walk through it, discover it step by step […] as image upon image, as a sequence of spaces.” (Hauser & Zumthor, 2007, p. 38).

At first glance, these concept sketches appear rough and imprecise; a colourful and chaotic composition. But, much like the “pictures” of Herzog, these sketches are not intended as visual representations, but as a presentation of “the aura of the building,” so that the image itself “take[s] on the quality of the sought after object.” (Zumthor, 2010 [1998], pp. 12, 13).556

554 There is strong similarity in Zumthor’s phenomenological descriptions of haptic images to the poetic images Gaston Bachelard: when Zumthor says that in his imagination he “can almost feel a particular door handle in [his] hand,” he confirms Bachelard’s assertion that “the feel of the tiniest latch has remained in our hands” (Bachelard, 1994 [1958], p. 15; Zumthor, 2010 [1998], p. 7). Elsewhere, Zumthor’s oneric cupboards released “a smell of oil paint,” while Bachelard’s contained “the odour of raisins drying a on a wicker tray” (Bachelard, 1994 [1958], p. 13; Zumthor, 2010 [1998], p. 7). These images are “physically inscribed” into our embodied synaesthetic memory and “emerges into the consciousness as a direct product of the heart, soul and being of man, apprehended in his actuality” (Bachelard, 1994 [1958], pp. 14, xviii).

555 See also Zumthor (1998, pp. 7-9) and Spier (2001, pp. 21, 30)

556 See Chapter Three
Zumthor’s sketches of the Kunstmuseum (Bregenz), show how the structure was conceived as a “daylight museum” (Zumthor, 2014a, p. 137). Here we see how the “three slab walls [...] temper the mood of the light and gives depth to the room” (Zumthor, 1998, pp. 214-215). The charcoal sketches work in much the same way: they “enable us to step back, to look, and to learn to understand that which has not yet come into being and which has just started to emerge.” (Zumthor, 2010 [1998], p. 13).

Although Zumthor has employed this technique in other projects, they have since become synonymous with Vals because of the sheer number of iterations produced (1991-1995):

Quarry sketches: later we called them block studies; we drew many of them [...] I remember feeling great freedom in pursuing issues of composition, working them out on the basis of these block studies, giving them shape in spontaneous drawings and trying to understand them by talking about them. (Hauser & Zumthor, 2007, p. 38)

These block studies (or Steinbruchbilder) provide a visual transcript of the dynamic elements at play: “Mass and hollow, openness and compactness, rhythm, repetition and variation” (Hauser & Zumthor, 2007, p. 38). The same illustrative method was used to describe the movements of the water, the visitors, and the natural daylight; all spilling and trickling between and around the large black blocks – “like boulders standing in water” (Hauser & Zumthor, 2007, p. 27).

Figure 79 - “Block Study”: K’s and W’s for alternating sequence ‘Warm Kalt Wasser Kavernen (“hot cold water cavern”)’
Source: Hauser and Zumthor (2007, p. 38)

558 Although Zumthor won the design competition much earlier (1986), both the clients and brief were significantly revised during the first five years. It was only in 1991 that the Vorprojekt [preliminary project] began to take shape as a single, separate bathing structure (Hauser & Zumthor, 2007).
The next step is to envisage the spatial properties of each image – grand, modest, expansive, compressive, dark, light, narrow, wide – all manner of individual spaces are created and “drawing by drawing, the staging of entry situations and path configurations are tested, like a frame-by-frame graphic version of screenplay. A few touches of colour convey something of the mood to be expected, of the intended atmosphere” (Hauser & Zumthor, 2007, p. 59).

Reimaging promotional images

At the same time that these spacial sequences are illustrated, physical models are fabricated at different scales and in different materials – plaster, clay, cardboard, Styrofoam, wood, wax, wire, and stone – guided by the feeling Zumthor is trying to visualise: “sometimes you need a model, sometimes you need a scale model, sometimes you need three pieces of material” (Spier, 2001, p. 29). Like the sketches, these models
often begin as crude explorations of matter in order to understand better its “meanings and sensuousness” (Zumthor, 1998, p. 156). In 2013, an exhibition of many of the studio’s models took place in the old post office adjacent to his *Kunstmuseum* in Bregenz.

Looking at this assortment of material mock-ups – all neatly arranged on black shelves of steel rods – the visitor may be initially struck by the sheer ‘sloppiness’ of many of the models: large roughly cut slabs of blue polystyrene, a series of half-finished looking clumps of plaster, a few gnarly balls of wire-wool, and an unapologetically ugly orange waxwork with bits of card sticking out from it at skewed angles.

This was not the refined crafted quality one might expect from the son of a cabinet-maker and former apprentice to a carpenter. In fact, these are not “models at all in the conventional sense,” (Zumthor, 2010 [1998], p. 66). Rather, they are physical manifestations that “anticipate a certain spatial impression without trying to define them precisely.” (Hauser & Zumthor, 2007, p. 31). All of which help Zumthor “to learn how to stage the effects in a meaningful way.” (Hauser & Zumthor, 2007, p. 70).
When asked about the quality and arrangement of Zumthor’s models, Pallasmaa explained that...

the models are at the height of his eyes, and there are tens of them, and they are almost like doll’s houses, sort of naïve, with all the furniture and objects and human figures and everything. And I said to him that “your models have a theatrical atmosphere” and he said “yes, this is exactly what I’m aiming at, I see them as theatres of life and I want to see life in my models rather than just a pure and empty architectural context” (Brand & Pallasmaa, 2013)

This process of imagining through images (in various mediums) continues “until they reach the delicate point of representation when the prevailing mood I seek emerges, and [then] I stop” (Zumthor, 2010 [1998], p. 13).

One of the most circulated photographs from this design stage, shows an interior perspective of the 1:50 model of Therme Vals made for the presentation to the town council. This model consisted of chunky blocks of the same gneiss rock intended for the buildings construction, with thinner tiles balanced on top and smaller ones mosaicked into the base below. This all sat within a steel basin filled with a bright blue liquid (diluted antifreeze). The photographs taken from within this model “anticipate the spatial atmosphere” of the baths (Hauser & Zumthor, 2007, p. 57): natural light shining through the gaps between the roof slabs,559 reflecting off the surface of the water and splashing up against the dark rock face.

![Figure 83 - Stone, Light, and Antifreeze: interior of gneiss stone concept model of Vals](source: Hauser and Zumthor (2007, pp. 138-139))

559 Or “table-tops”, as Zumthor calls them (Hauser & Zumthor, 2007)
What is most interesting, however, is that although there are indeed neater, more refined scale models of all of these projects further down the line, it is not the photographs of those that Zumthor presents as his promotional images, nor does he employ photorealistic computer renderings (as is now common practice). Instead it is still the early photographs of these “sort of naïve” models that get put before the public.

This is because, irrespective of the medium – be it models, paintings, or sketches – what is created “is not architecture but merely a more or less inadequate representation of architecture” (Zumthor, 2010 [1998], p. 66). This is something that should be understood and embraced, not disguised or ignored, otherwise they threaten to do the architecture (and the architects) a disservice:

> If the naturalism and graphic virtuosity of architectural portrayals are too great, if they lack ‘open patches’ where our imagination and curiosity about the reality of the drawing can penetrate the image, the portrayal itself become the object of our desire [...and it] no longer holds a promise. It refers only to itself” (Zumthor, 2010 [1998], p. 13)

This is a problem that Zumthor has recently encountered first-hand, when a series of digital renders of an already controversial project was produced, provoking criticism from both the professional and public spheres (Howarth, 2016).

“These were,” admits Zumthor, “conventional renderings, which I personally don’t like so much,” adding that they were only intended for the purpose of the environmental review and not the wider public (Zumthor & Robathan, 2016). He has since confirmed that his studio is working on a new models which will “allow us to take pictures with natural daylight, the light of the sun, which makes a lot of difference.” (Zumthor & Robathan, 2016).

Flicking through any publication of Zumthor’s work will reveal that these model photographs are not the only form of promotional images adopted by the architect. Many of the images shown will be from professional photographers, in particular, Hans Danuser and Hélène Binet. Indeed, Philip Ursprung maintains that (along with the collaboration of H&dM with Thomas Ruff), the images these photographers created from Zumthors projects “radically affected the conventions of architectural photography” (Ursprung, 2009, p. 68; 2011, p. 176). Like Benjamin’s storytellers, their images are not journalistic records of events but a creative and personal interpretation (W. Benjamin, 2006, p. 174).

Danuser was commissioned to photograph three of Zumthor’s projects (Shelter for Roman Ruins at Chur, St. Benedict’s Chapel, and the baths at Vals). Danuser’s photographs capture moments, material details, 

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560 See Chapter Three
561 Design for the Los Angeles County Museum of Art. For commentary, see Hawthorne (2013, 2014, 2015)
562 Only two of these were from Zumthor. The images of Vals were commissioned by the composer and percussionist Fritz Hauser in 2000, as part of the booklet for the CD Steinschlag
and fragments of the journey through and around the structures. These images intentionally preserve the same open patches that were so important to Zumthor, requiring participation from the viewer in order to reconstruct the perception of the building in their own imagination. This deliberate “discontinuity” therefore protects the building from “being reduced to a mere image.” (Ursprung, 2009, p. 71). Danuser’s photographs from the Ruins and St. Benedict’s became the first public exhibition of Zumthor’s early work (1988), at the Architekturgalerie, Luzern. These images have since been reproduced across the globe, and reinforced the “importance of images in the reception and mediatisation of architecture” (Danuser & Gantenbein, 2009, p. 28).

Binet has also photographed a number of Zumthor’s works, as well as those of a number of other notable architects and, like Danuser, takes a fragmentary approach. Binet believes that inviting the viewer to become emotionally involved in this way is a more personal and meaningful approach “than describing a space in which you [as the viewer] are not” (Winston, 2015). It also helps to reaffirm the boundaries between embodied vision and pictures – that “a photograph is not a space,” and that there is always more to see and feel than what is shown (Winston, 2015): “Photography is a very, very simple experience [...] I’m not going to bring you everything because it’s not possible.” (Binet, 2012).

It is possible to convey the visual hapticity of materiality, however, and this is something that Binet is also interested in, “to feel the wood, the stone, the concrete”; ideas of tactility that are best expressed visually in “light and shadow” (Binet, 2012). This is particularly clear in her images from Kolumba (Fig. 84). Binet

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564 Including Zaha Hadid, Daniel Libeskind, and more recently, Studio Mumbai
hopes her photographs will influence viewers’ subsequent perceptual experience of the spaces captured, and that they might come “to be aware of the materiality, to feel the atmosphere, to feel that they are really somewhere in a special space which is talking, which is singing, which is giving something.” (Winston, 2015).

In a recent interview, Zumthor described his intentions for an unbuilt project that his studio is currently working on but, on reflection, these words may be better understood as a common thread that runs throughout all of his projects: “a rich atmosphere, [with] historic density and material presence” that creates a “sacred, sublime kind of experience,” one “without didactics, without premature explanations” that affords visitors the opportunity to “make their own experience” (Zumthor & Robathan, 2016).565 These are the affective qualities that are created in Zumthor’s architecture, and that his images (sketches, models, photographs) can only hope to present,566 because it is ultimately only through direct embodied experience that we feel “the magic of the real” (Zumthor, 2006, p. 19; 2010 [1998], p. 83).

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565 If these words sound familiar, it could be because they are very similar to those that appeared in his first monograph nearly two decades earlier. In his Works 1979-1997, Zumthor described his architecture as the concretion of a number of abstract themes and ideas, including “place, material, energy, presence, recollection, memories, images, density, atmosphere, permanence, and concentration” (Zumthor, 1998, p. 7)

566 See Chapter Three
Figure 86 - Touchstone: Laetitia Casta, Vals
Source: Issermann (2011, p. 32)
Steven Holl

Architecture, more fully than other art forms, engages the immediacy of our sensory perceptions. The passage of time; light, shadow and transparency; color phenomena, texture, material and detail all participate in the complete experience of architecture.” (Holl, 1994, p. 41)

Steven Holl is an architect and academic for whom issues of phenomenology, hapticity, and embodied perception are of great interest and inspiration. For the majority of his professional career, Holl’s architectural thinking has developed through three fundamental principles: anchoring (1989), intertwining (1996), and parallax (2000).567

Anchoring concerns the relationship between building and context – a revision of Mario Botta’s notion of ‘building the site’ (Frampton, 1991, p. 6). Botta was concerned with the way in which architecture contributes to the massive hermeneutical background or character of a place – its history, cultural practices and traditions, as well as the topographical and meteorological context – in order to develop a vernacular that was sympathetic without being nostalgic.

567 There are others of course. Holl’s initial studies were typological, many of which were published in the early editions of the Pamphlet Architecture series (1980-1982). Post parallax, Holl went through stages of exploring numerous sub-principles that emerged during the previous two decades, most notably scale, hybridity, and porosity. But the source of each may be retraced to his work and his thinking during 1989-2000.
Where Holl departs from Botta, is in his conviction that this contribution should be directed toward the betterment of place and, is therefore as much about challenging the existing morphology as harmonising with it (Frampton, 2003, p. 11). Looking backwards in order to look forwards. In either case, the site offers a specificity that helps define the building, and thereafter, for the building to further define the place.

Unlike the other arts “architecture is bound to a situation [...] intertwined with the experience of a place,” and should therefore “have an experiential connection, a metaphysical link, a poetic link,” explains Holl (Holl, 1991, p. 9). Each place has a “profound uniqueness”:

[...] its light, its air, its smell, its ambient color, its history, or, I should say, many histories. I realized that each site on earth was a different beginning point, experientially, historically, intellectually, capable of joining us together in new ways as our bodies move through it and as it, the place, moved through our bodies. (Holl, 2003b, p. 42)

It is in Holl’s elucidation of this mytho-poetic linkage that we begin to see the influence of phenomenology emerge and with it the concept of intertwining (Merleau-Ponty, 1968a). In his introduction to Intertwining, Holl states that “phenomenology concerns the study of essences; [and] architecture has the potential to put essences back into existence” (Holl, 1996, p. 11). This can be achieved by adopting a more-than visual approach to architectural design, “one that entails not only the visual, but the conceptual, the haptic, [and] the phenomenological” (Holl, 2003b, p. 37).

Thus, “an architecture of intertwining is connected with a phenomenal architecture of everyday experience” (Holl, 1996, p. 7): “A range of smell; sound, and material – from hard stone and steel to the free billowing of silk – returns us to primordial experiences framing and penetrating our everyday lives.” (Holl, 1996, p. 11). In short, “we must bring architecture back to what we really feel when we apprehend it.” (Holl, 2003b, p. 69).

Holl’s third principle, Parallax, develops the notion of phenomenological perception as an “intertwining [of] inner and outer feelings, inner and outer thought,” by considering the way in which we actively participate in the production of these perceptions, as embodied and ambulatory beings. Parallax refers to our perception of objects in the world and the way that they appear to change or disappear as we change our position relative to them (Holl, 2003b, p. 81).

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568 Holl’s claim that a phenomenological architecture provides “the hope of returning to us all those experiential qualities; light, material, smell, [and] texture” (Holl, 2003b, p. 32), has similar Husserlian undertones to those of his Swiss contemporaries, H&dM and Zumthor.

569 On early theories of the development of object recognition and object permanency, see for instance, Piaget (2013 [1943], pp. 4-44), and Chapter 2.
In everyday experience we tend not to notice this process until our inferences are proven to be mistaken (as with optical illusions). The problem with this, Holl argues, is that it engenders an experiential apathy: if we believe that we can see what something is and its associated sensations by simply looking at it, why bother engaging with it any further (with our proximal senses)? This goes for both inhabitants and architects.

One consequence of this, Holl argues, is a rise in “synthetic” architecture generated by disingenuous materials: coated metals, simulated woodgrain, fake stone veneers, etc., all designed to provide the visual illusion of authenticity. And while this synthetic environment may be achieved for a fraction of the cost there remains an experiential impoverishment: “The sense of touch is dulled or cancelled with these commercial industrial methods, as is the texture and essence of material and detail displaced.” (Holl, 1996, p. 16). Architecture therefore, has an “urgent role to play in engaging all the senses” and remedying the current ocular bias (Holl & Caruso, 2012).

Architecture is an antidote to an existence which is synthesized in the space of TV and lived out in sheet rock apartment buildings with low ceilings and synthetic carpets. As soon as you turn the machine off and call for your Chinese takeout, you are sitting in a mean environment which doesn’t go away just because you can plug yourself into a completely synthesised environment. (Holl, 2003b, pp. 32-33)

According to Holl’s phenomenology, architects should be finding opportunities to entice inhabitants to move, explore, and sensorially discover their spaces (Holl, 2015). By making the otherwise prosaic, quotidian experiences – such as opening a door or ascending a staircase – more phenomenologically explicit and profound, we may “achieve an intensity of life experience” (Holl, 2006, pp. 101-102).

Fundamental principles

The concepts of Anchoring, Intertwining, and Parallax, are but a few of the “operative heuristics” employed by Holl during the design process (Frampton, 2003, p. 23). These interests form part of the design driver, and are often expressed through experiential qualities such as space, light, and materiality. But before Holl allows himself to consider any of these wider phenomenological possibilities, he must first settle on an overriding concept or “idea” (Holl, 2003b, pp. 36-38). This, for Holl, is the difference between architecture

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570 This polemic is explored in more detail in The Epilogue
571 One that offers “life enhancing pleasure” (Berenson, 1908 [1897], p. 35). See Chapter Three
and building (Lippert, 1991, p. 4) – the former points beyond itself in an attempt to connect the inhabitant to something greater, while the latter is pure self-expression, vacuous and “empty.” (Holl, 2003b, p. 40). In fact, it is by virtue of these particular ideas – combined with the strategies of site specificity (anchoring) and phenomenological devices – that each of Holl’s projects remains uniquely tailored to their time and place. A practice that helps avoid the shackles of architectural branding.

With all projects, I explore deeply to find an original idea that can drive a design, an idea that can make the building mean more than it would if I was making a kind of style that I move from one site to the next. I’m not a signature architect because I don’t have a signature. (Holl & Caruso, 2012)

These ideas are diverse and inspiration can seemingly come from anywhere. The concept for the contemporary art museum in Helsinki, for instance, came from Merleau-Ponty’s notion of “the chiasm” – the doublet of objective existence and subjective experience, like the felt-reciprocity of “two hands clasping each other” (Holl, 1996, p. 90): to touch and to be touched (Holl, 2007).

This ‘intertwining’ evinces itself on various levels throughout the programme: the building is situated at the intersection of a cultural axis between the Parliament building (west), Elie Saarinen’s Helsinki Station (east), and Aalto’s Finlandia Hall (north) – an intertwining of urban geometry that influenced the footprint of the building (Holl, 1996). The concept is played out further in the interior, which is arranged to afford fluid movement in and out of various exhibition spaces, up and down from various floors, and from galleries on one side to those on the other. This creates “a continuous unfolding of an infinite series of changing perspectives.” The result, we are told, “is a synthesis of building and landscape...a kiasma” (Holl, 1996, p. 90).

Not all of Holl’s ideas are philosophically based. Some are simply poetic metaphors, such as the “gathering of different lights” that inspired the design of St. Ignatius Chapel (Seattle, WA). Holl has also sought inspiration from esoteric musical compositions. The so-called Stretto House (Dallas, TX), for example, features a number of overlapping ‘phrases’ (a concept that took six months to conceive), and more recently, the Daeyang Gallery House (Seoul, South Korea) which found its form in Istvan Anhalt’s never-

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573 Not that this is in any way a guaranteed recipe for successful architecture, as Frampton posits: “one comes to accept that, as is inevitable with such an abundant production, not every work will come to be realized with the same level of conviction. Moreover, one cannot but wonder if certain ideas have not already been pushed beyond their intrinsic limits, like the idea of “porosity” because when one applies this principle at a mega-scale there is a tendency to lose control over the scalar modulation of the work.” (Frampton, 2003, p. 26)
574 See Chapter One
575 See Merleau-Ponty (1968a), and Chapter Two
576 In the Finnish language there is no “ch,” hence the original French Chiasm, became Kiasma (Holl, 2007, pp. 270-271)
577 An idea that was initially conceived as simply reflecting the coming together of students from different nationalities and cultural backgrounds at the university (Holl, 1999)
Once this initial idea is conceived, it finds visible expression in Holl’s 5”x7” water-colour paintings. These paintings or diagrams “bring the mind and the hand together” to generate “something you’re emotionally feeling as well as intellectually feeling” (McCarter, 2015, p. 328). Sometimes in perspective, sometimes abstract, rarely accurate, the intention in each instance is to “catch intuition and first thoughts […and to] set the imagination free” (Holl, 2002).

The concept diagram for Kiasma, for instance, took the form of two arrows (“nature” and “culture”) running parallel to each other and then crossing paths (Fig. 90). Below this image the words “concept: heart of Helsinki. Intertwining: nature/culture/art/education” can be read. Beneath there is a rough cross section of two rectilinear blocks, resting one atop the other, crossing over at the centre and switching positions.

The “gathering of lights” at St. Ignatius took the form of “seven bottles of light in a stone box,” one for every day (Holl, 1999, p. 16). Each “bottle” in turn also corresponds to a particular element of the Jesuit liturgical programme.578

This is what Holl has done, every morning since he started in 1979. He now has over 10,000 paintings, each of which has been scanned, catalogued and carefully arranged in boxes above his drawing table (Holl & Pedersen, 2013a; McCarter, 2015).579 Holl maintains that “drawing is central to architecture,” and initially recorded all of his thoughts in pencil, but this process was laboriously slow, often “taking days, sometimes weeks to complete” (Holl, 2002).

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578 “The narthex, the procession hall, the main gathering space, the reconciliation chapel, the choir, and the chapel of the Blessed Sacrament […and] the bell tower” (Holl, 1999, p. 16)
579 Many of which formed the basis for two publications: Holl (2002, 2012)
The shift to water colours provided a certain speed and freedom in gestural expression and imagination: “With watercolour, it’s about the movement of light across a surface. Right from your initial thought about a building or space, the wash brings in the condition of where the light is coming from.” (Holl & Caruso, 2012).

This technique is not limited to the initial concept diagram, but extends to every element of the design, from dramatic interior perspectives to door handles and light fixtures. These intuitive illustrations are often “playfully vague,” but – as with Zumthor’s charcoal sketches – this ambiguity offers a range of possibilities for the empathetic imagination (Holl, 2002).
While technical drawings employ signs, symbols and other notational devices, they do not convey the feeling or significance of a place “as compellingly as the play of light and shadow, as the music of echoes and textures and smells, as the aura and presence of real materials.” (Holl, 2003b, p. 38). Holl’s synaesthetic images by contrast, “operate from the onset with the full spectrum of the architectural palette. I not only see the diagram: I feel it, hear it, smell it.” (Holl, 2003b, p. 38).580

580 And elsewhere: “We could speak of the sounds implied by an array of brittle linear forms, or the way a view smells.” (Holl, 2003b, p. 84)
Holl argues that this “analogue process” at the inception of any project, is “the only way to be completely connected to the subtleties and qualities of the role intuition plays in conception.” This stage is all about the reciprocal relationship between the “mind-hand-eye” triad (Holl, 2003b, p. 67). But this is not to say that Holl is averse to the use of computers or digital technology. On the contrary, he credits them both with “supercharging” his design process:

I was on my way to Korea and put the [drawing] pad on the table, with a light on it, and I snapped the iPhone image, and sent the drawing to New York. When I arrived home, there was a model. So they go from my watercolour directly into a 3D computer drawing. That drawing goes into our 3D printer and in a matter of, say, twelve hours, in the time that I’m flying, I can have a model waiting for me when I arrive back at the office.” (Holl & Pedersen, 2013b)

Physical models (whether created digitally or by hand) still have an important role to play. They become the testing ground for Holl’s aqueous sketches, exploring the sense of proportion, the quality and direction of natural light, and the changing perspectives that unfold as you move up, down, though, and around the various spaces (parallax).

![Figure 92 - Bottles of Light: a selection of the many models of St. Ignatius](Source: Holl (1999, p. 17))

This sets in motion a conversation between models, sketches, and ideas, each being reworked and refined based on the previous iteration until a satisfactory confluence is found (Holl, 2003b). Only after a space is created that is capable of inducing the same feeling of “light, material and detail which gives it an absolutely emotional and moving experiential quality” as that intended for the building itself, does Holl move on to technical plans and detail drawings (McCarter, 2015, p. 329).
In designing from the inside out—a move he inherited from his tutor, Hermann Pundt—Holl is often able to postpone the generation of exterior form, ensuring the focus is on the feel of the spaces, rather than what the structure looks like from a contemplative distance, "because the inside is always more important than the outside" (McCarter, 2015, p. 329):

Today we are presented with buildings proclaiming themselves by a lot of big moves—I call it 'broad brush' architecture—and they're always something less when you go inside them. These buildings are crude in this way and ultimately disappointing. [...] a building should always be more when you go into it than it is from the outside. That's my measure of good architecture." (Holl, 2006, p. 95)

The 'instrument' used for measuring here is the felt and feeling body as it moves through the space (Holl, 2000, p. 38). Thus, "good architecture" is judged by the quality of the impression it makes upon us, "which can be sensed and felt regardless of understanding the architect's concept and philosophy." (Holl, 2003b, p. 52). Indeed, "if a building is really strong, people will respond on many levels; not only the intellectuals but also a five year old child who just touches the wall." (Holl, 2003b, p. 21)

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581 Like Zumthor and H&dM
Space, light and material

During the time that Holl was developing these principles he had also been teaching at the University of Columbia alongside friend and colleague, Kenneth Frampton. It was Frampton who convinced him to go to Helsinki for the Alvar Aalto Symposium (1991) where he would meet Pallasmaa, with whom Holl would later collaborate in the production of *Questions of Perception* (along with Pérez-Gómez), and in the designing of *Kiasma*.

These two figures, Frampton and Pallasmaa (along with their phenomenological inclinations, Heidegger and Merleau-Ponty, respectively), would inspire an interest in the multisensory potential of embodied perception that has since become synonymous with Holl’s work. This is particularly evident in his writing,
where a concern for “tactility” (Frampton, 1981) and “hapticity” (Pallasmaa, 2012 [2000]) come to the fore: “Matter interlocking with the perceiver’s senses provides the detail that moves us beyond acute sight to tactility. From linearity, concavity and transparency to hardness, elasticity and dampness, the haptic realm opens” (Holl, 2003b, p. 85).  

This “haptic realm of architecture is defined by the sense of touch” (Holl, 1996, p. 16), and opens “when the materiality of the details forming an architectural space become evident” (Holl, 1994, p. 91). Accordingly, materiality – along with “space” and “light” – form the three “transcendent principles” through which architecture may “inspire and transform our day-to-day existence.” (Holl, 1994, pp. 40, 132).

Holl’s interest in material and making is most apparent in the design of those elements in which we are in direct corporeal contact as well as those that visually appeal to our sense of touch (either through their textural effects or as an invitation to engage proximally). Hence, “everything which is tangibly present must receive attention” (Holl, 1994, p. 41). This attention can be felt in the “details such as the twist of a door handle” (Holl, 1996, p. 90). Holl’s handles are bespoke pieces, sculpted for the various tactual exchanges involved in the act of pushing, pulling and turning.

Shaped like a draped length of cloth, the dark, variegated sand-cast metal door handles at the entrance of St. Ignatius appear quite pronounced against the bleached cedar doors (Fig. 95). The cool, rigid metal asserts itself beneath the visitor’s fingers as its large folds envelops the hand. The appearance of mass and solidity is belied by the surprising ease with which the door swings gently open, further reinforcing the inadequacy of vision and the need for proximal engagement.

Figure 95 - Made by Hand for the Hand: entrance door handles of St. Ignatius, Kiasma, and the Daeyang Gallery House
Source: author

[582] See also Chapter Two
[583] What Pallasmaa refers to as the “unconsciousness of vision” (Pallasmaa, 2008 [1996], p. 42). See also Chapter 3
[584] Holl confides that his desire to construct “poetic details” was inspired by Aalto, and the “soulful expression” that he evokes in “parts of a wall, a door, and a stair rail…” (Holl, 2006, p. 95)
[585] While ‘pivoting’ and ‘hinging’ are recurrent themes for Holl, this element of sensory surprise (doors that appear one way – massive and heavy – but feel another), is a common theme running through the architect’s work. It has the effect of reminding the visitor not to rely too heavily on visual cues.
The handles at the entrance to Kiasma are similarly oversized and forged from metal. Unlike those at Seattle, here the handle appears softened by the smooth concave cuts that create a narrowing at the point at which a hand might grasp (Fig. 95). This invitation is extended further by a large egg-shaped indentation embossed into the upper portion, awaiting the fleshy pulp of the visitor’s thumb.

This same level of attention may also be found in Holl’s residential projects, such as the Daeyang Gallery House, where the bronze handles of the front door mimic the form of the reflecting pools in the garden (Fig. 95). 586

The sensuous materiality of Holl’s compositions, are also “conveyed via the structure and material of optic […] experience” (Holl, 1996, p. 15).

Consider the haptic impressions the visitor may visually perceive at St. Ignatius. From the outside, this fairly squat building emanates a sense of mass via the thickness of both the concrete walls (inferred by the depth of the window reveals) and the cedar doors (suggested by its assortment of five-inch deep oval apertures). The cedar – used for the doors, the altar, and the baptismal font – is mottled with the concave cuts of hand-chiselled workmanship (Fig. 96). Though there is no cause to touch any of their surfaces, the smooth undulating forms of the warm wood are visually seductive and welcome an inquisitive caress.

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586 A playful reference that Holl has employed in many of his other buildings, including the Visual Arts Building at the University of Iowa (2010-2016), the Linked Hybrid apartment building in Beijing (2003-2009), and the Cité de l’Océan et du Surf museum, Biarritz, France (2005-2011), all of which feature bespoke handles that reference the general layout of the building.
Holl explains that this tactual invitation was an intentional part of the design inspired by the “emphasis on the senses and the haptic realm of touch in *The Spiritual Exercises*” of St. Ignatius (Holl, 1999). Inside, the walls and ceiling appear as an irregular patchwork of heavily textured surfaces – large squares of hand-trowelled scratch-coat plasterwork are arranged perpendicular to each other (*Fig. 96*). The dull white cement plaster softens the light and reduces glare. The sunlight that pours in from the windows and skylights at various points in the room sweeps away the shadows from the surface and down the crumbly channels of the wrinkled skin.

The only smooth surface visible is the lustrous poured concrete floor. Black stained and waxed, the blurred reflections create the illusion of a viscous liquid, as if the whole floor were submerged in a pool of molasses (*Fig. 98*).

At the rear of the building a more intimate space is created for the Chapel of the Blessed Sacrament. Here the rough plaster walls are smothered with white candle wax (*Fig. 99*). The solidified dribble of the once liquid wax is visually evocative of trickling water or icicles. Combined with the single bare Madrona Tree, the space feels stark and cold, and the luminous orange glow emitting from some unseen source in the wall adds little warmth.

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587 In *The Chapel of St Ignatius*, it states that the Blessed Sacrament is “finished in beeswax by the artist Linda Beaumont” and that it emanates “a special smell” (Holl, 1999, p. 64). In my experience, however, it neither looked nor smelt like beeswax, so I cannot claim to have perceived it as such.
The extent to which Holl is involved in every aspect of the design is evidence of his desire to generate an atmosphere through the orchestration of particular elements and phenomena at every scale. The translucent fuse-glass windows in the Blessed Sacrament (and elsewhere) for instance, are only one of a number of elements which combine the imaginative hand of the architect with the creative hand of local artisans (Fig. 100).

In all, Holl designed more than forty types of liturgical furniture, including the hand-made woollen carpet in the narthex (depicting the spiritual journey of St. Ignatius), the sand-cast glass wall sconces (Fig. 101), the suspended hand-blown glass lights, the bronze and timber ambo, the altar, the baptismal font, as well as the pews. In this way he is able to ensure the construction of the “poetic detail [which] resides in the
In addition to the tangible material element of the design, Holl is equally interested with the immaterial, and the “metaphysics of light,” which he uses to explore and expose the rich phenomena of the everyday (Holl, 1996, p. 11):

Light’s shadow and shade, its different sources, its opacity, transparency, translucency, and conditions of reflection and refraction intertwine to define or redefine space. Light subjects space to uncertainty, forming a kind of tentative bridge through fields of experience. What a pool of yellow light does to a simple bare volume or what a paraboloid of shadow does to a bone white wall presents us with a psychological and transcendent realm of the phenomena of architecture. (Holl, 2003b, p. 87)

Holl maintains that there are as many different treatments or finishes to light, as there are to any material, and that each contributes something different to the overall mood or feel of the space (Holl, 1996, p. 13).
This can be achieved through a number of techniques, such as altering the form or finish of the glass through which the light passes:

Bending glass induces dazzling variations to a simple plane with the geometric curvature of reflected light. Cast glass with its mysterious opacity traps light in its mass and projects it in a diffused glow. Sandblasted glass, likewise, has a luminescence that changes subtly, depending on the glass thickness and type and the grain size of the silica sand used. (Holl, 1996, p. 16)\footnote{588}

Coloured light may also be introduced to tincture the impression of a space through either the intervention of coloured glass, or via the detour of reflected light from a coloured surface (Holl, 2015). While we find Holl already experimenting with this effect in his design for the offices for D.E. Shaw and Co.,\footnote{589} at St. Ignatius they take on a spiritual quality.

The ‘stone box’ of the chapel itself contains six of the seven vessels of light from Holl’s sketches.\footnote{590} Each bottle correlates to a different part of the Jesuit Catholic ceremony and is naturally lit by its particular

\footnote{588 See for instance, Holl’s addition to the Cranbrook Institute of Science, Boomfield Hills, Michigan (1992-1999). Here “a new entrance lobby forms a ‘Light Laboratory’ [where...] different phenomena of light such as refraction and prismatic colour are displayed on the lobby walls” (Holl, 2003a, p. 258)


590 The seventh vessel is the 52ft bell tower that only announcing itself at night when its solemn verticality is illuminated and reflected in the surface of the pond}
‘colour field’. This is created when light passes through coloured glass and reflects off a surface painted in a ‘complementary’ colour. As Holl explains: “When people stare at a blue rectangle and then a white surface, they will see a yellow rectangle. The twofold merging of concept and phenomena in the chapel is communicated in this visual phenomenon” (Holl, 1999, p. 82).

The result in each instance is “a glowing phenomena that provokes a spatial sense” (Holl, 2015, p. 48). These devices also add a sense of time and drama to the space, as the quality of the light constantly changes, and the complementary colours converge and diverge again in their diurnal journey across the interior.

Daylight is also a fundamental consideration in Helsinki, where the altitude of the sun never rises above fifty-three degrees, and the hours of daylight during the winter months can drop below six. Holl employed numerous lighting devices in order to ensure that all twenty-five galleries could be lit naturally.

The shorter of the two volumes to the west invites daylight into the ground floor café and shop via a curtain wall of transparent glass. This wall continues beyond to permit sunlight into the adjacent gallery spaces through a combination of transparent and translucent glass.

The larger of the two intertwining volumes (to the east) faces west-southwest, on a sweeping curvature that embraces the shorter volume and mirrors the natural sun path “ultimately act[ing] as a catcher’s mitt for the horizontal light” (Holl, 2003b, p. 38).

The arcing form affords a large three story atrium space to be cloven between the two volumes, creating a third interstitial circulation space. This space is covered by a large expanse of sand-blasted glass that diffuses the sharp northern light, while also admitting reflected light down into the deeper gallery spaces.

The top (fifth) floor of the eastern block is lit by large skylights that curve along the line of the roof and appear almost like gills in this enormous fish-like structure, breathing in light from above (Fig. 104). The gallery spaces on the floors below (to the north of the building), employ a series of ‘bow-tie’ skylights that funnel reflected light in from above.

The different lighting devices, coupled with the varying geometries formed by the intertwining of the overall structure, ensure that each gallery space feels slightly different from the others, creating a variety of conditions to accommodate the diverse range of sculpture and artworks on display.

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591 The procession (sunlight), narthex (diffused sunlight), nave (blue glass with a yellow wall to the east, and yellow glass with a blue wall to the west), chapel of Blessed Sacrament (purple glass and an orange wall), choir (red glass and green wall), and the Reconciliation Chapel (orange glass on a purple wall) (Holl, 1999)
Figure 103 - direct sunlight projects shadows on to the white walls at Kiasma, revealing the various textural treatments: lines of brush strokes on the ‘orange peel’ textured wall of the top floor gallery space (left) (suggests it was applied by hand rather than sprayed). At the rear of the atrium space (centre), a dramatic silhouette of the spiral staircase is projected onto the curved concrete wall. The impression from narrow lengths of timber formwork remain, creating a texture of regular parallel bands of smooth and rough finishes. There are also moments (right) when the light picks out the almost ‘slap-dash’ brushwork of the plaster that creates a patchy effect similar to St. Ignatius
Source: author

Figure 102 - Adjustable Light: skylights flood the top (fifth) floor gallery space with indirect sunlight until it gets too bright, and the translucent white fabric blinds are drawn across (2011)
Source: CreativeCommons (https://www.flickr.com/photos/kiasmamuseum/14300473191/in/photostream/)
The experience of natural light is no less considered at the Daeyang Gallery House. On the lower ground floor there are three gallery or performance spaces – one large room, lit from above by eight identical rectangular skylights, and two further smaller rooms that are lit by large pocket lights excavated from the sides. These tall rooms, with their white walls and light grey stone floors, are intended not to require any artificial light.592

Ascending the stone stairs at the centre of the building, the landing of the dogleg offers a moment to pause, where the ‘ground’ is now at shoulder level and the visitor can see out across the shallow pool that surrounds (Fig. 106). It is the movement of the water here that creates the rippling, diaphanous light seen previously splashing upon the gallery floor below: the cuts are now clearly visible in the base of the shallow pool (Fig. 107).

The living and office spaces above the galleries are divided into three copper-clad islands, connected by the bunker below and the grass lawn above. Each island boasts a wall of transparent glazing – from pool to ceiling – facing inwards, so that each looks out upon the others (Fig. 108). These spaces, like the large gallery below, are also lit from above by a number of parallel incisions, inspired by Anhalt’s score with the (somewhat tenuous) allusion to the musical stave. The majority (forty) of these are frosted and set into the ceiling, while the remainder are clear and level with the roof so that every now and then a sharp shard of light is cast onto the wall. The pool also reflects shimmering light back up to the underside the eaves and internal ceilings.

592 Though there are in fact a number of spotlights dotted throughout and fluorescent lights hidden in the ceiling coves
Figure 106 - Datum Lines: eye-level and water-level meet at the landing between the gallery below and the house above
Source: author

Figure 107 - Reflected Light: sunlight reflecting from the surface of the pool creates a fluid play of light and shadow upon the underside the ceiling and eaves at different times of the day
Source: author

Figure 105 - Centripetal Space: the curtain wall of glazing orientates each of the living and office ‘islands’ to face each other
Source: author
Parallax and the changing perceptions afforded by the motive body is central to much of Holl’s thinking. Holl explains that the spaces at Kiasma are “meant to be silent, but not static,” (Holl, 1996, p. 88). Indeed, there is a strong sense of fluidity in this building, created in part by the ebb and flow of the natural light, but also by the curving walls and ceiling that generate contracting and expanding spaces that seem to carry the visitor along like a current. This is further accentuated by the long winding ramps that sweep up across the atrium space, relaxing the sense of division between floors (a sensation that continues between the east and west gallery spaces which are only separated vertically by half-floor divisions).

The programme here is relatively open – there is no specific route imposed nor any real sense of hierarchy to the spaces – the path that the visitor may take through (up, down, across, and so on) is of their own making. Here perhaps, we catch a glimpse of ‘porosity’ (of light, movement, sounds and space) that would become a key theme in Holl’s later projects.
At St. Ignatius, the site is relatively contained and open, and yet the visual muddle of irregular forms and spaces that accost the visitor when first entering the main hall is quite overwhelming (Fig. 110). Moving through the chapel, a sense of rhythm is generated by the graceful slopes and the sudden rise and fall of the ceiling. As Holl puts it, "Proportion can be felt more than directly perceived. It is, like cacophony and harmony in music, quite subjective and quite powerful." (Holl, 2003b, p. 66).

One may be forgiven for suspecting that Holl’s preoccupation with light and texture would result in incredibly striking spaces – which they do – but this does not necessarily equate to photogenic spaces: elements like coloured glass, reflected and refracted light can be difficult to capture. And as Holl laments, colour photography of his work tends to dull “the material and tactile dimensions of architecture” (Holl, 2003b, p. 81).

This is not an architecture intended to be reduced to static images taken at a single moment from a particular point of view. It is an architecture designed to be felt directly through “the phenomena of the body moving through spaces” (Holl, 2003b, p. 52). Thus, the arrangement of spaces and lines of sight in most of Holl’s buildings are carefully orchestrated to provoke curiosity and intrigue, to “encourage us [actively] to experience architecture by walking through it, touching it, [and] listening to it.” (Holl, 2015, p. 47).

This is clearly felt in many of his works, where there does not seem to be a single point perspective from which the visitor may easily take everything in – an optimal optical position from which the entire program may be simply distilled and clearly comprehended. Indeed, in many cases, a single shot of an interior does little to explain the composition or scale of the space.

When it comes to the importance of images in his work, Holl seems to take something of an ambivalent stance: on the one hand, his water colour paintings and synaesthetic concept images are a fundamental part of his process. On the other hand, Holl argues vehemently that images – and particularly photographs – are inherently limited in their experiential content and may “only partially engage the myriad of sensations evoked by architecture” (Holl, 2003b, p. 82).

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593 I made three separate attempts to draw this space while I was sitting on a pew, and was denied each time by the visual confusion of non-Euclidean geometries that intersect at various angles, interfering with my sense of perspective.
594 Something Holl has experimented with previously in his Stretto House
595 One flagrant instance of image conscious design in architecture can be found at the south-western perimeter of Coop Himmelb(l)au’s Busan Cinema Centre, in Korea. The building boasts the world’s longest cantilever roof (2011-present), and a few hundred meters away is a plaque embedded into the floor that simply reads “Take Photo Here”. See Chapter Three
596 Such spaces are far more akin to the seductive sense of revealing that Barthes mentions (Barthes, 1981 [1980]). See also Chapter Three
597 So much so that an article on any one of his projects is rarely published without one
Additionally, invisible or ephemeral phenomena, such as the surfaceless spaces of smells, sounds, time, the wind, the movement of the sun, “and other tactile dimensions are part of primary perceptions which can not be gleaned from a magazine but require the consciousness of a body in space.” (Holl, 2003b, p. 69).

Moreover, these easily “grasped images are the signature of today’s culture of consumer architecture,” the resistance to which “is not only necessary, [but...] essential to a culture of architecture.” (Holl, 2015, p. 55).
Epilogue: Scenography, architecture and affect

Figure 110 - Setting the Stage: construction of the stage-set for André Chénier underway at the Bregenz Opera Festival (2011)

the arts have [...] continued to gravitate, if not towards entertainment, then certainly towards commodity and [...] scenography [...] feeding the media-society with gratuitous, quietistic images

- Kenneth Frampton, Towards a Critical Regionalism

In Chapter Four, I explained how atmospheres can create some of our most evocative and touching experiences of architecture. And further, that these atmospheres could be intentionally constructed through the careful and considered application of certain “generators” (Böhme, 2013a, 2014b, 2014c) – these ranged from the immaterial to the material, from the ephemeral to the enduring, and from those few that we could temper (if not control) to those to which we were simply subjected.598

In the previous chapter, I explored how three architectural practices – Herzog & de Meuron Architekten, Atelier Peter Zumthor, and Steven Holl Architects – were able to conceive and realise such affective

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598 I have identified six primary generators of atmosphere: moods and affective states (our own Befindlichkeit, or “attunement”); situations, activities, and events (such as a sporting event, a concert, or a carnival); narrative history or massive hermeneutical background (of the object/person/place) – knowledge that tinctures our ideas, feelings and opinions about the subject; Einfühlung – a form of empathetic perception concerned with the animation of non-sentient subjects (trees, cliffs, columns, etc.); meteorological conditions; materiality and the corporeal imagination - the potential meaning and significance of which varies with context (location, culture, history/tradition, climate, etc.). See Chapter Four
encounters. From my research, I have found certain consistencies in the approach of each practice, which may be summarised as follows:

- A phenomenological or more-than visual appreciation for the apperception of architecture
- Designing from the inside-out: conceiving of the atmosphere or mood intended first, prior to any concerns regarding form or external appearances
- Free-flowing ‘open’ conceptual process involving chirographic practices (hand-drawn sketches, paintings, etc.)
- Material and spatial (kinaesthetic) sensibility developed through various models and material explorations
- A general recognition for their art as the composition of atmospheres, tincturing the various generators in order to attune the inhabitant to a particular mood that is conducive to the desired function/activity of the space: “setting the tone for cognition, action and thought” (Pérez-Gómez, 2016, p. 27)

Some of these points are fairly intuitive while others may be more eccentric or idiosyncratic, but it is this final point that is most revealing, as it concerns many of the ideas surrounding the notion of a felt-phenomenology that I have developed throughout this thesis. As Zumthor explains:

> I try to make sure that the materials are attuned to each other, that they radiate; I take a certain amount of oak and a different amount of pietra serena and add something to them: three grams of silver or a handle that turns or maybe surfaces of gleaming glass, so that every combination of material yields a unique composition […] I listen to the sound of the space, to the way materials and surfaces respond to touching and tapping […] from which I create room, space, and place. (Zumthor, 2010 [1998], pp. 86-87)

“The ability,” explains Zumthor, “is rather akin to designing a stage setting” (Zumthor, 2006, p. 43). This understanding is certainly in keeping with Böhme, who maintains that atmosphere is the subject matter of architecture (Böhme, 2003), and that the ancient art of scenography is paradigmatic of this approach (Böhme, 2013a).

But this similitude also presents cause for concern: if the art of architecture parallels that of the stage designer, are we simply creating special effects and visual illusions for the purpose of entertainment? In so doing, are we not reducing ourselves to the very ocularcentric “idolaters” (Frascari, 2011, p. 13) and

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599 For variation, see also (Zumthor, 2006, p. 23)

600 We know that Skenographia, or ‘stage-painting’ has been employed since the fourth century BC., when Aristotle references the practice in his Poetics (2012). See also Böhme (2017, p. 172)
“imagists” (Holl, 2003b, p. 87) that this thesis set out to discredit and disavow? Indeed, does this allusion to theatricality not risk transforming architecture into those same “stage sets for the eye” that Pallasmaa and others\(^{601}\) admonished so vehemently during the New Global Era and the rise of the architectural spectacle (Pallasmaa, 2008 [1996], p. 31)?

It is a question, then, of whether, in promoting a felt-phenomenology of affective atmospheres, we have not simply come full circle; encouraging an architectural approach that necessarily engenders the same superficial values of scenography. Or, differently put, does a touching architecture amount to anything more than stage-setting?

**Dress to impress (Semper, Ruskin, and Loos)**

One of the first to theorise this affinity between the art of architecture and that of scenography was the nineteenth century German architect, Gottfried Semper. During a visit to the Great Exhibition of 1851 Semper came across the “Caraib Cottage” [Caribbean hut] in part of the Colonial Division. For Semper, this simple structure articulated the four elements of architecture.\(^{602}\)

But it also provided sufficient proof of the kinetic origins of architecture, which may be summarised as follows: “the most primeval art” is that of textiles which employs man’s natural eurythmic impulses. The consequences of these “rhythmical sequence[s] of space and time movements” may be found “in wreaths, a string of pearls, scrolls, round dances, the rhythmic tomes attending them, the beat of the oar, and so on.” (Semper, 2004, p. 82).

It was from this impulse that binding developed into the complex act of weaving, to meet the need “to cover, to protect, and to enclose” (Semper, 2004, p. 113). Semper explains how this need was originally met by what was readily available – such as animal skins and tree bark. Synthetic weaving and other ‘man-made’ surfaces may therefore be understood as an imitation of this natural covering, a “surrogate for draperies” (Semper, 1983 [1853], p. 22).

The woven wall is conceived in the first instance for the purpose of enclosing space: “wickerwork for setting apart one’s property, the use of mats and carpets for floor coverings and protection against the heat and the cold and for subdividing the spaces within the dwelling” (Semper, 2010 [1851], p. 103). The structure itself (be it the tectonic of the frame or stereotomics of compressive mass) arose from the need to meet

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\(^{601}\) Such as Fernandez-Galiano (2005); Frampton (2011a); Hartoonian (2012); Jencks (2005); Saunders (2005); Sklair and Gherardi (2012); Vidler (2008).

\(^{602}\) The hearth, roof, enclosure and mound. These inspired the motives of making: the technical arts of ceramics and later metal works (around the hearth), carpentry (roof), weaving of walls (enclosure), and masonry (mound) (Semper, 2010 [1851])
“secondary functions,” namely supporting these coverings. Where structural support was necessary it remained subservient; “only the inner, invisible structure hidden behind the true and legitimate representatives of the wall, the colourful woven carpets” (Semper, 2010 [1851], p. 104).

Accordingly, “dressings” [“Bekleidung”] are therefore derived from the original need for covering, protection and enclosure, and as such “have become the sensible signs for those concepts [...forming] perhaps the most important element in the symbolism of architecture” (Semper, 2004, p. 123). Hence, Semper’s rather broad use of the term in reference to what may otherwise simply appear to be purely decorative patterns or finishes (applied to our bodies, objects, or architectural elements). At its most immaterial, a thin veil of paint is “the subtest and most incorporeal dressing” (Semper, 2004, p. 379).

This same material relationship is evident in the “the highly characteristic style of the theatre [that] arose from the performance stage, which was made of boards but richly decorated and dressed” (Semper, 2004, p. 250). In this respect, the art of architecture and high Greek drama both partake in the practice of dressing – creating one reality while masking another. This, Semper argued, enabled the latter (structure/actor) to transcend its physical, material and prosaic associations to become something more. In “emancipat[ing] form from the material and from naked need,” (Semper, 2004, p. 379) the qualities of the dressing could be chosen purely for their “true atmospheric” potential (Semper, 2004, p. 439, n.85). What is important is the effect that it could have upon the viewer, “the certain carnival spirit” that could be generated by “the haze of carnival candles” (Semper, 2004, p. 439, n.85).

Although Semper may have left the guidelines of architectural dressing fairly open to interpretation – the principles of which were governed by “good taste,” “common sense,” and the laws of nature (such as gravity, balance and proportion) – some of Semper’s contemporaries were more vociferous and less equivocal.

For Ruskin, the whole system of architectural dressing (as cladding), should be treated with suspicion, as it afforded a “contemptable violation of truth [...] a direct falsity of assertion respecting the nature of

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603 But critically, these elements have “nothing directly to do with the space or the division of space. They were foreign to the original architectural idea and were never form-determining elements to start with.” (Semper, 2004, p. 248).
604 See also Semper (2004, p. 248)
605 Including the “chisel marks on stonework, the basket-weave pattern of a column capital, or the tapestry-inspired alabaster wall panels employed by the ancient Assyrians.” (Mallgrave, 2004, p. 8)
606 Such as “the (nontextile) application of enamels and glazes on vases, the sheathing of wooden doors and furniture with metal plates, and the delineation of a masonry wall with a stucco dressing or ashlar pattern, such as when one dresses stonework.” (Mallgrave, 2004, p. 50).
607 Semper may have intended to present a more detailed direction on the application of dressing in contemporary architectural practice in his final unfinished third volume of Style. It is certainly suggestive that the final section of Four Elements, the kernel for his opus, concerned ‘practical applications’, while the subtitle of Style (”Practical Aesthetics”) was originally intended as the title (Mallgrave, 2004, p. 51)
608 See for instance Semper (2004, pp. 83, 90, 125, 132, 143, 147, 160, 343)
material, or the quality of labour” (Ruskin, 1871 [1849], p. 28). In his *Seven Lamps of Architecture*, (written just two years before the Great Exhibition), Ruskin outlines the “three principle kinds of fallacy by which architecture is liable to be corrupted” (Ruskin, 1871 [1849], pp. 29, 46):

1. “The suggestion of a mode of structure or support, other than the true one”
2. “The painting of surfaces to represent some other material than that of which they actually consist”
3. And “the use of cast or machine-made ornaments of any kind.” (Ruskin, 1871 [1849], p. 29)

This last “form of fallacy”, that of “Operative Deceit,” is condemned by Ruskin for two (rather ineffectual) reasons: firstly, it is bad, and secondly, it is dishonest (Ruskin, 1871 [1849], p. 43). But the key distinction between the work of the machine and that of man, is that the latter has invested himself into the making of the object (time, effort, creativity etc.). Moreover, Ruskin assures us that this investment is readily apparent in the work itself: the feelings of the artisan that went into the creation of the artefact may be empathetically felt in the perception of the work itself (something that machine work cannot possess).

Regarding the first principle, Ruskin explains that it is not strictly speaking necessary for the architect to exhibit the structure, nor are we to bemoan its concealment any more than we should complain about the way our own skin conceals what lies beneath. A structure made of brick but faced with stone or marble is acceptable on the condition that “it be clearly understood that a marble facing does not pretend or imply a marble wall” (Ruskin, 1871 [1849], p. 42). However, if some material were applied and treated in such a way as to suggest it were performing a structural role (when it was not), “this would of course, be a direct deceit, and altogether unpardonable.” (Ruskin, 1871 [1849], p. 30).

The second principle is “generally defined as [...] inducing the supposition of some form or material which does not actually exist” (Ruskin, 1871 [1849], p. 37). Common examples include painting timber to appear as marble or bas relief. This last point is particularly relevant to the subject of dressing. Ruskin maintains that painting upon a material – where the painting in question only aims to present itself – does not

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609 For all the reasons that nature is considered “immeasurably superior” (richer, more delicate, and more admirable) to the work of man, so the work of man is superior to the machine (Ruskin, 1871 [1849], p. 42)

610 “For it is not the material, but the absence of the human labour, which makes the thing worthless; and a piece of terra cotta, or of plaster of Paris, which has been wrought by human hand, is worth all the stone in Carrara, cut by machinery.” (Ruskin, 1871 [1849], p. 45). This popular anti-industrial sentiment is also voiced by both Stokes (1978, pp. 183-184) and Marx (2009 [1932], p. 46)

611 Which is to say, in the traces “of thoughts, and intents, and trials, and heart-breakings” that have been recorded upon it over the course of its becoming (Ruskin, 1871 [1849], p. 44). In other words, its mattering (A. Benjamin, 2006).

612 It is however possible to program a machine to create objects and artefacts that deliberately incorporate an ‘accident’ or imperfection, in order to induce a more empathetic appreciation of it by rendering its appearance more manufactured (in the original sense of made by hand. See chapter Two). For more on the eradication of the mark of the hand in the process of technological reproduction and industrialisation, see W. Benjamin (2007 [1936]); Brand (2013); and Pye (1968)

613 For “the most flagrant instance of this barbarism” see Ruskin (1871 [1849], p. 32)
attempt to “assert any material whatsoever” and is therefore not deceptive. So “to cover brick with plaster, and this plaster with fresco, is, therefore perfectly legitimate.” (Ruskin, 1871 [1849], p. 38).

However, “to cover brick with cement, and to divide this cement with joints that it may look like stone, is to tell a falsehood” (Ruskin, 1871 [1849], p. 38). Similarly, no material other than stone should be coloured to resemble stone, as this fallacy will “cast a shame and suspicion over every part of the building.” (Ruskin, 1871 [1849], p. 46).614

At the end of the nineteenth century these same concerns were recapitulated in the writings of Adolf Loos. Paraphrasing Semper, Loos affirmed that “In the beginning [there] was Bekleidung.”615 Loos goes on to qualify this statement by reiterating the “correct and logical path” of architecture:616 that the need for covering came first, followed by the need to support coverings (structure). The first concern of the architect is not therefore tectonic but atmospheric: “[s]He senses the effect that [s]he wishes to exert upon the spectator […which is] produced by both the material and the form of the space.” (Loos, 1982 [1898]-b, p. 66).617 Beyond the generation of affect, Bekleidung may have additional roles to play in architecture, such as serving practical purposes618 or maintaining sociocultural ideas and expectations.619

Left unchecked, however, this practice is open to abuse by the “heralds of imitation,” “surrogate architects,” and “papier-mâché tankards!” (Loos, 1982 [1898]-b, p. 67). Consider an example offered by Loos: when building an apartment block, the preferred finish for the developer, is “to have his facades

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614 For a brief overview of Ruskin and the issue of architectural ornamentation, see also Harries (1997, pp. 28-32) and Spuybroek (2016, pp. 53-64)
615 “Im Anfang war die Bekleidung” (Loos, 1982 [1898]-b, p. 66). In English translations of this essay, Bekleidung is simply “cladding,” and not in the full Semperian notion of “dressing” (Mallgrave, 2004)
616 Which he explicitly references to Semper (Loos, 1982 [1898]-b, p. 67)
617 See also Chapter Four
618 Weatherproofing, insulation, durability, etc.
619 Such as tradition, religion, fashion, hygiene and so on
entirely plastered from top to bottom. It costs the least [...and is] the truest, most correct, and most artistic way.” (Loos, 1982 [1898]-a, p. 95). The trouble with this, Loos observes, is that this would not result in a building that people would want to inhabit.620

It is therefore necessary (“in the interest of rentability”) to apply something more than the required minimum, something alluring and reflective of the personalities of the inhabitant/s perhaps (Loos, 1982 [1898]-a, p. 96). Problems arise, however, when this desire to achieve a particular effect is reduced to achieving an appearance by “nail[ing] on a particular kind of façade.” (Loos, 1982 [1898]-a, p. 96). The result is a city of false faces or masks: a Potemkin city “of canvasses and plasterboard […] intended to transform a visual desert into a flowering landscape for the eyes” (Loos, 1982 [1898]-a, p. 95).621

620 The functionalist triad of economy, efficiency and utility are, alone, insufficient to create an atmosphere conducive to “living well” (Frascari, 1991, p. 4)
621 The term Potemkin, is derived from the story of Grigory Potemkin (also known as the Prince of Tauride, following the annexing of the Crimea from Russia). In 1783 Potemkin sought to impress Catherine the Great and her foreign diplomats, by falsely promoting the prosperity of the area. This included the hasty erection of a number of hollow houses and mock buildings that could pass at a distance as petty bourgeoisie villages, populated by bands of well-dressed serfs. Once the procession had passed, the group would dismantle everything and set up again further along the tour.

Figure 112 - Potemkin Village: decorative facade of a San Francisco house sits beside its scantily clad neighbour (2012)
Source: author

262
For Loos then, the issue was not one of style per se – of whether to create “the wood huts where happy peasants dwell” or “stone palaces where feudal lords seem to reside” – but that these images were being constructed from “canvas, pasteboard, and paint,” a “ridiculous and immoral” practice (Loos, 1982 [1898]-a, p. 96).

In response to this offence, Loos proposes the “law of cladding”: “we must work in such a way that the confusion of the material clad with its cladding is impossible” (Loos, 1982 [1898]-b, p. 67). In practice, this meant that “wood may be painted any colour except one – the colour of wood,” that “stucco can take any ornament [...except] rough brickwork,” and similarly, “any and all materials used to cover walls – wallpaper, oilcloth, fabric, or tapestries – ought not to aspire to represent squares of brick or stone.” (Loos, 1982 [1898]-b, pp. 67, 68).

Fashionable outfits (Frampton, Hartoonian, and Böhme)

These same issues of tectonics, materiality and atmospherics have remerged once more at the end of the twenty-first century, and the rise of theatricality that accompanied the spectacularisation of architecture. For Frampton the “tendency to reduce architecture to scenography” amounts to an architecture that is entirely narcissistic and indifferent to its context; one that emphasises its visual appearance above all else; and whose design is predominantly a product of fashion and star architectural eccentricity (Frampton, 2011a, 2011b, 2011 [1985]). Notable scenographers cited by Frampton include the likes of Charles Moore, and the “highly photogenic scenography” of Ricardo Bofill.

But what makes “the aesthetic[s] of theatricalisation (spectacle) permeating architecture today” distinct from Semper’s “tectonic of theatricality” (Hartoonian, 2012, p. 237)? For Hartoonian, it is the difference between “dressing” [Semper] and “dressing-up” (Hartoonian, 2003, 2006a, 2006b): “While the former view [Semper] artistically articulated the manifold lines of a building’s body, the latter’s artistry is conceived as a composition in advance of the process of construction.” (Hartoonian, 2003). (This may be more clearly

622 With the exception that a cladding material may be kept the same colour as the material it is cladding, if that happens to be its natural colour. Thus, Loos has no issue with a wood cladding another wood of inferior appearance, or one metal cladding another, so long as the metal cladding is not then painted in a metallic paint (Loos, 1982 [1898]-b, p. 68).

623 See Chapter One

624 Whose “flaccid eclecticism” and “theatrical effects” reduces “the architectonics of construction to pure parody” (Frampton, 2011b, p. 292) (in reference to the Piazza d’Italia (1979), and his collaborative designs, with William Turnbull, for Kresge College (1974)).

625 (With reference to Portland City Annex (1982)) “The construction fabric of this building bears no relation whatsoever to the ‘representative’ scenography that is applied to the building both inside and out.” (Frampton, 2002, p. 336, n. 2)

626 And his “affinity for admass seduction,” as demonstrated by the Walden 7 housing complex (Barcelona, ES): “an architecture of narcissism par excellence” [original emphasis] (Frampton, 2011 [1985], p. 317).

627 For a variation of this definition, see Hartoonian (2006a, p. 135). Hartoonian further illustrates this point with reference to the difference between the design drivers of a wetsuit and those of a carnival dress: “The surface of the
understood in terms of Pugin’s distinction between “ornamenting construction” and constructing ornament” (Pugin, 1841)).

In the Post-modern era this took one of two forms, known colloquially as ducks or decorated sheds (Venturi, et al., 1972). Foster argues that in recent years a hybrid has emerged in the form of a decorated duck:

- Decorated Sheds: the ornamenting of construction, where the decorative or theatrical elements on the exterior have little or no bearing on the function or utility of the interior space. As noted previously by Frampton (Frampton, 2002 [1997], 2011a), this style of dressing is particularly evident in many of the projects of H&dM.

- Decorated Ducks (Foster, 2004): the construction of ornament, where form takes priority and the interior is simply a by-product of this process. These theatrical objects come to symbolise, if not

former is attached to the skin of the body, exaggerating these parts of the body that are covered. The carnival dress instead relates to the body through ancillary armatures, the structure of which is sought in reference to the final form and the surface appearance of the dress” (Hartoonian, 2006b, p. 273)

628 Of the latter, Pugin writes, “Architectural features are continually tacked on buildings with which they have no connexion, merely for the sake of what is termed effect; and ornaments are actually constructed, instead of forming the decoration of construction, to which in good taste they should be always subservient.” (Pugin, 1841, p. 1)

629 Herzog admits that “we’ve focused so intensely on the surfaces of buildings because it seems like such an interesting and neglected field of activity” (Herzog, et al., 2004, p. 55). This is certainly evident from the gabions that clad the glass offices at the Dominus Winery, or the metallic serpentine skin that sheathed the Messe Basel exhibition centre, or the patterned façade of the Eberswalde technical library (see previous chapter). In each instance, the body of the building itself is relatively predefined by a strict set of pragmatic requirements (winery, warehouse and storage buildings, etc.)

630 For a variation of this essay, see Foster (2008). For an overview of these concepts, see Chapter One
iconise, an idea, product, or architect.\textsuperscript{631} In each instance, the process of architectural design amounts to “the gratuitous manipulation of the surface as a sensuous end in itself,” independent of the interior requirements or organisation (Frampton, 2011a, p. 357).\textsuperscript{632} The result is “a total schism between the inner substance and the outer form […so that] the form itself either repudiates its constructional origin or dissipates its palpability.” (Frampton, 2011b, p. 307).\textsuperscript{633}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure114.png}
\caption{(left) Decorated Shed: Library of Birmingham (UK). (right) Decorated Duck: EMP Museum, Seattle (WA)}
\source{author}
\end{figure}

As Foster notes, today the decorated duck is seen as “a winning formula for museums, companies, cities, states, and other corporate entities that want to be perceived, through instant icons, as global players.” (Foster, 2004, p. 311). In addition to issues of novelty and aestheticism there are also a number of other concerns that coincide with image building, such as an obliviousness to context (historical, sociocultural, climatic, and topographic)\textsuperscript{634} which have generated seemingly interchangeable objects in the name of the iconomy. A focus on form-making is also a prioritising of appearances over tectonics, lest we forget that these fantastical images still need to be built by people with their own limitations, such as ergonomics (whether construction workers can physically get access to what they need) and technical ability.\textsuperscript{635}

\textsuperscript{631} See also Chapter One, Foster (2008) and Hartoonian (2003, 2006a)
\textsuperscript{632} Particularly true of later Gehry projects and other starchitectural spectacles erected during the New Global Era. Frampton’s references include those of Ben van Berkel, Lars Spuybroek, Daniel Libeskind, Greg Lynn, Hani Rashid, and Zaha Hadid (Frampton, 2011a, p. 357). See also Chapter One, and my critique of Gehry’s EMP museum in Seattle, and Hadid’s Fire Station at Vitra
\textsuperscript{633} This is most clearly expressed in sectional drawings, where “the relationship between cladding and the frame is exploited, subjecting the former to a vision of aesthetics that has the least connection to function, type or model, and the frame.” (Hartoonian, 2006a, p. 119)
\textsuperscript{634} What Koolhaas famously termed the “fuck context” issue of “bigness” (Koolhaas & Mau, 1995, p. 502). See also Frampton’s fourth point of a Critical Regionalism (Frampton, 2011 [1985], p. 327)
\textsuperscript{635} Calatrava, for instance, recently faced a number of lawsuits for various issues in his buildings, including the deterioration of the roof of his Palau de les Arts Reina Sofia Opera House, the structural collapse of his conference
Another interrelated issue concerns copy-cat architects, who take the alluring image of a starchitectural design and attempt to replicate it (which inevitably includes a replication of the aforementioned issues). The problems regarding the physical construction of the facsimile are compounded further, however, by the significant lack of resources compared to that of the starchitect (which include limitations in finances, equipment, technical proficiency, and access to specialists) (Brisbin, 2016; Wainwright, 2013b).

Clearly, there are insurmountable issues with treating architecture as a form-making exercise that prioritises the visual (image) above all else. But while a photogenic façade may be symptomatic of scenographic design, it is by no means a guarantee. Certainly for the critics discussed thus far, grandiosity is not a measure of scenography. What matters, according to them, is the honesty and integrity of the material dressing, which has more recently manifested as a general concern for the “transform[ation of] material into materiality.” (Hartoondian, 2016, p. 72).

The question of what a building should be made from is necessarily a question of tectonics, where the choice of material is based upon the “triad of working, stress-related and economic-legal qualities” that enable the required space to be created (Böhme, 2013d, p. 95). As Semper stressed, what is important is that the material of each element be chosen for its own qualities and the degree to which it “serves the idea” (Semper, 2004, p. 651). This type of specification therefore favours the functional over the characterful, and encourages the production and employment of materials that act in a predictable and predefined manner (such as particleboard, plastics, steel, concrete and synthetic materials). These are, however, predominantly tactless materials and often present an unnaturally homogenous appearance. And this (as Loos observed) leads to a desire to conceal these materials with something more aesthetically appealing.

But getting dressed need not be as spurious (or reprehensible) as Loos and others suggest. Consider, for example, Formica or veneered particleboard: “on the inside messy, brown, without character; on the outside, imposing as beech, oak, but also as marble or metal” (Böhme, 2017, p. 71). It is because of what is on the inside, that the object – counter, bookshelf, table etc. – has the structural properties it does; without these it would not be functional. Yet without its more attractive mask, it would not be economically viable (no one would purchase it).

centre in Oviedo, and the leaking roof of his Ysios Winery. Elsewhere his footbridge in Venice has required extensive repairs, and the accidents suffered by pedestrians slipping on the glass floor of his footbridge in Bilbao has caused the city to pay out thousands in medical compensation (Quah, 2014). But each project certainly looks spectacular.

636 Qualities pertaining to the quantifiable properties of the material, such as ductility, elasticity, viscosity, durability, thermal conductivity, plasticity, production cost, sustainability, transport cost, and so on. These intrinsic variables are what Gibson described as the distinguishing characteristics of substances (J. J. Gibson, 1979, p. 20)
Böhme explains that it is this “concurrence of aesthetic and economic aspects that leads to the separation of the design interior and surface.” (Böhme, 2017, p. 71): “material and materiality thus part ways” (Böhme, 2013d, p. 95). In fact, for the dressing to be truly effective, we need to “forget the means that must be used to achieve a desired artistic effect,” since this would only distract from it (Semper, 2004, p. 439, n.85). But while this may reinforce a strong material independence between these two elements, the success of the product requires a level of interdependence: each needs the other, but to perform vastly different roles.

Both elements are therefore also of equal import, and while non-structural components in architecture are often considered ‘non-functional,’ they ought to be better understood as “purely aesthetic,” which is to say, that “their function consists of presenting themselves.” (Böhme, 2013d, p. 95). The value of the dressing is not strictly one of use or exchange in the Marxian sense of the word, but rather one of “aesthetic value” (Böhme, 2017, p. 75).

Thusly understood, each of the materials within our sensorium is usually chosen for its “material aesthetics” (Böhme, 2017, p. 67), the “theatrical value” (Böhme, 2013d, p. 95) of which is determined by at least one of the following: its structural and sensorial properties; its hermeneutical background; and its apparent structural, sensorial, and sociocultural associations.

In the first instance, the material is selected based on the qualities and quantifiable properties of which we have experiential knowledge. In other words, if a door needs to be strong, heavy and substantial, it will be made from a material that possesses these qualities: metal, hardwood, granite etc. (as opposed to glass, plastic or cardboard). Similarly, if the door need only create the impression of strength, it may simply be clad in a strong material.

In the second instance, the material is selected for the qualities we associate with it and/or its application (Baudrillard, 2005 [1968]). This is what Böhme terms the “social character” of the material, and largely determines whether we perceive it as noble or regal, feminine or masculine not sure these are opposites, industrial or rural, and so on. Such “characters are subject to cultural change and even fashion.” (Böhme, 2017, p. 69).

The third category is reserved for those materials that are manipulated and deformed in order to appear less like what they are and more like what they are not. This refers to the almost trompe-l’œil effect of a material borrowing the credentials of another by mimicking its appearance (this includes the simulation of

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637 The personal or sociocultural associations and resonance that its past application has endowed upon it
638 See chapter Four
“natural” surface finishes and effects offered by innumerable veneers, vinyl flooring, and paints)\textsuperscript{639} for the purpose of seduction (Baudrillard, 1988 [1979]).\textsuperscript{640} This material disguise would certainly be in direct contradiction of Loos’ \textit{Laws} and Ruskin’s \textit{Principles}.

But Ruskin had a caveat: ‘\textit{dishonesty}’ in architecture is permissible where imitation is employed as an aid to the empathetic imagination, while also acknowledging its own limitations (that it is only a mask, a playful façade for the purposes of entertainment). We may even go so far as to say that in these circumstances there is the expectation of illusion: no one that goes to play a round of ‘prehistoric mini-golf,’ actually expects to see real dinosaurs, but they may well feel disappointed and deceived if there weren’t at least an oversized footprint of one cast in Modroc, and a few poorly painted fibreglass ‘boulders’.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Figure115.jpg}
\caption{Figure 115 - Expected Staging: a painted fibreglass dinosaur is posed between the artificial grass of the mini-golf course, and the photographed forest backdrop. Lost in Time Minigolf. Auckland, NZ (2015) \small Source: author}
\end{figure}

There is the expectation of fakery that is accepted as part of the experience. In fact, much of the entertainment industry is predicated on this willing suspension of disbelief into which we enter, and that allows us (to a certain extent) to accept what we see: theatrical performances, magic shows, and illustrations of imaginary people or places (such as sci-fi comics and films).

\textsuperscript{639} For example, the description from one paint manufacturer’s website boasts that “Dulux Design Stone is a paint that achieves the earthy feel of weathered natural stone and concrete. The texture in Dulux Design Stone paint brings extra depth and dimension to walls to replicate the variation found in nature. Suitable for interior or exterior surfaces.” (Anon, 2015). Curiously the same paint company also offer other material styles including \textit{suede, rust, pearl, and metallic} (available in thirty different colours). All seeking to simulate the visual appearance of something other than what they are.

\textsuperscript{640} This is also a trend for materials whose appearance may be augmented almost all of its associated character in order to become something new and other. Hartoonian illustrates this with reference to Hadid’s \textit{Phaeno Science Centre} (Wolfsberg, DE), where there is an “attempt to defy the forces of gravity, [and] the heaviness of materiality.” Here “the image of lightness, the look” is not something that concrete has, it is something that is forced upon it, something that “precedes [...] materiality” (Hartoonian, 2016, p. 67).
We may say, perhaps, that theatricality and scenography are permissible in a particular architype: those designed for the sole purpose of viewing spectacles – including theatres, cinemas, sporting arenas, stadia and concert halls – where the purpose of the design is to contribute actively to the generation of an atmosphere that will attune the audience to engage more meaningfully/empathetically with what they see.

A felt-phenomenon

Perhaps part of what bothers Frampton and others about the return to surface effects is that the material deception is becoming so advanced that we are losing our ability to distinguish artefact from artifice. This is the true test of scenography. Both the art of scenography and that of architecture aim to create atmospheres by the employing particular generators. But in each instance there is an experiential difference between the space of the theatre and real life (in its average everydayness). This may be understood as something akin to Husserl’s distinction between modes of intentionality or apprehension: signitive, imaginative (pictorial), and perceptual (Husserl, 2003).

Most perceptual experiences take place somewhere along a sliding scale from the signitive – an impression that is given indirectly – to the perceptual – where what we perceive is given to us directly as a product of our mindful physical presence of where and how we are (our attunement) (Böhme, 2013b). An event described in a book is an example of the former, while a direct lived experience of the event would be an example of the latter. Theatrical performances fall somewhere in between: the stage-set uses generators to help produce an atmosphere befitting the intended mood of the scene, but the generators used are more signitive or pictorial in nature. We are undeniably affected by them, but the experience we have (although physically co-present) is nevertheless phenomenologically diluted and synthetic, exploiting our empathetic and synaesthetic perceptual faculties to compensate imaginatively for this sensorial “lack” (Mitchell, 2005).

The production of atmosphere is the sole aim of the staged experience, and it is therefore scripted, choreographed, revised and rehearsed. As the audience, our relationship to the built environment of the stage and the actors is predominantly one-directional. We enter into a “they-relationship” (Schutz, 1967 [1932]), whereby we are both co-present in the same space, but I am not participating or influencing the performance, and remain simply a spectator. The scenographer recognises this limitation and designs stage

641 Dressings including costumes/clothes, props/ornaments, sound effects/acoustics, lighting effects, and various other decorative elements
642 See Chapter Three
643 Such as a written or verbal description of something that is currently inaccessible to us like a past event
644 The use of signs in Brechtian theatre for instance (Böhme, 2017)
645 As many neurological studies into marketing psychology have shown. See Chapter One
sets accordingly – to be looked at from a distance without any further sensorial engagement. As Ingold explains:

...in a stage set, hills are placed on the ground, while stars, clouds, and the sun and the moon are hung from the sky. In this as if world, hills do not rise, nor do fires burn or pebbles grate, nor do the sun, moon, and stars shine or the clouds billow. They may be made to look as though they do, but the appearance is an illusion. Absolutely nothing is going on. (Ingold, 2008, p. 1801)

Scenography may appear substantial, even tactile,646 but this “pure aesthetic of materials [materiality] assumes (indeed, requires) that we won’t handle or touch them. What produces an atmosphere of coldness or softness would probably be robbed of its effect if one tried to verify its promise by touching.” (Böhme, 2013d, p. 98).647 It is, after all, just for show: a Potemkin city of painted plywood and polystyrene.

But why should we oppose “the scenographic and the drawing of veils over the surface of reality” (Frampton, 1985, p. 29), if we are unable to tell the difference? A veil is only experienced as a veil if it is phenomenologically perceived as such. As Loos points out, “does the owner of an imitation diamond not gaze fondly at the glittering glass?” (Loos, 1982 [1898]-a, p. 95). If we are unaware that the mask is a mask, then we perceive it as a (sur)face, and have little choice but to take it at (sur)face value. If the inhabitant cannot discern the difference between (which is to say, is experientially ambivalent towards,) ‘authentic’ and ‘faux’ materials within their sensorium, then factors other than affect may cast the deciding vote.648 In an aside addressed to “you imitators and surrogate architects,” Loos concedes that ultimately,

[...] our pitiful bodies are in your power. They have only five senses at their disposal to distinguish real from counterfeit. And at that point where the man with his sense organs is no longer adequate begins your true domain. There is your realm. (Loos, 1982 [1898]-b, p. 69).

This is consistent with my thesis of how our empathetic perception is primed by our knowledge and beliefs, that in turn affect how we feel:649 our awareness of its (object/person/place) hermeneutical background serves to construct an “expectation bias” prior to any direct or experiential assessment (Plassmann &

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646 Which is to say, we may visually perceive its “tactile aesthetics” (Frampton, 2011a, p. 352). See Chapter Three
647 This, for Herder, was where the power of sculpture lay: in the haptic promise of its image, not in the direct physical touching of the sculpture itself (Herder, 2002 [1778]-b). Indeed, Diderot notes how the suggestion of animism and tactual ideas (of texture, temperature, solidity, and so on) that are felt by the beholder risk being exposed as illusory by an incredulous hand (Diderot, 1995).
648 Such as time taken to manufacture, ethical or sustainable issues surrounding the working conditions under which the material is fabricated, the carbon footprint involved in shipping between different countries, the ease with which the builder is able to construct the desired element, and of course, financial differences.
649 For instance, findings from marketing and advertising studies conclude that “protein bars taste worse if they are described as ‘soy protein’. Orange juice tastes better if it is bright orange. Yoghurt and ice cream are more flavourful if described as ‘full fat’ or ‘high fat’. Children think milk and apples taste better if they’re taken out from McDonald’s bags.” (Bloom, 2011, p. 45). See Chapter Four
Believing that the diamond is real, and not a good moissanite, positively alters our perception of it. This is not simply snobbery – fMRI studies have confirmed that we actually derive more pleasure from the experience of it (Plassmann, O’Doherty, Shiv, & Rangel, 2008).650

It should be evident from the preceding discussion, that dressing has an important role to play in this, contributing to the generation of an appropriate atmosphere,651 be it on the stage, in a supermarket, or at a restaurant.652 But in the final analysis, what matters is what is felt, for “the quality of architecture can essentially only be judged by corporeal presence” (Böhme, 2013c, p. 99).

What distinguishes the architect from the scenographer is that the architect has to contend with the unpredictability of potential inhabitants: their designs will be perceived in their full phenomenological richness by the felt body of the inhabitant who actively experiences and explores them in their average everydayness (Böhme, 2003). They are not part of an as-if world, they are – as we are – (always already) in the world, and they need to stand up to the demands of life and pass the test of reality.

This means that for the atmosphere of architecture to be effective – to affect me in a meaningful and sustained manner – more than simply substance it needs to have sustenance.653 For “when the thing behind the mask is not right or when the mask is no good” (Semper, 2004, p. 439, n.85) dressing amounts to little more than novel scenographic effects. Thus, any structure that seeks to succeed only visually, is designed for static spectators. It is without nourishment, and no matter how much of it we are presented with we remain hungry for more but unfulfilled.654

The active inhabitation of architecture, however, is a more-than visual encounter that requires more than just good dress sense. It is only through “complete technical perfection” – “the judicious and proper treatment of the material according to its properties, and above all only the consideration of these properties in the act of shaping form” – that we can hope to create something truly sustentative or life-enhancing (Semper, 2004, p. 439, n.85).

650 And conversely, less pleasure when we believe it to be a fake. For a more comprehensive overview of the implication of neurostudies for the psychology of branding and marketing, see Plassmann, Ramsøy, and Milosavljevic (2012)

651 To make a home feel more homely, a spa more relaxing, a cemetery more solemn, etc. (Loos, 1982 [1898]-b, p. 66)

652 As regards our perception of how food tastes, this may be tinctured by the material properties of the cutlery, the artistic arrangement of the meal on the plate, the sound of each bite, and so on. See Chapter One, and in particular, Bohannon, Goldstein, and Herschkowitsch (2010); Harrar and Spence (2012, 2013); Michel, et al. (2014); Piqueras-Fiszman, Laughlin, Miodownik, and Spence (2012); Piqueras-Fiszman and Spence (2011); Spence and Shankar (2010)

653 In both senses: to endure (from the Late Latin, sustentientia); and to support and sustain life

654 See Chapter Three
This returns us to the nature of a felt-phenomenology and the test of reality (touch), since “to really be there [...] means to experience the resistance of things and [...] to experience one’s own physical status in the resistance” (Böhme, 2013b, p. 31). The architect must therefore become a master of both tectonics and atmospherics.

Touching architecture

In a recent interview with Hartoonian, Frampton explains that he first wrote the essay, *Critical Regionalism*, to “counter this reduction of architecture to scenography” (Frampton & Hartoonian, 2016 [2001], p. 43). Central to his thesis was the notion that “by readdressing the tactile range of human perceptions,” we may yet be able to overcome this visual bias that accompanies “the relentless onslaught of global modernisation” (Frampton, 1985, p. 29). For architecture is ultimately something that we feel, something more-than visual and should therefore “be experienced in terms other than sight alone” (Frampton, 2011 [1985], p. 327):

One has in mind a whole range of complementary sensory perceptions which are registered by the labile body: the intensity of light, darkness, heat and cold; the feeling of humidity; the aroma of material; the almost palpable presence of masonry as the body senses its own confinement; the momentum of an induced gait and the relative inertia of the body as it traverses the floor; the echoing resonance of our own footfall [...] this is something that] cannot be reduced to mere

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655 Since to touch is to touch oneself, and to be touched (affected). “One indicator of this is that tourists compulsively touch, tap or scratch the building and things they visit” (Böhme, 2013b, p. 31). See Chapter Two
information, to representation or to the simple evocation of a simulacrum substituting for absent
presences. (Frampton, 1985, p. 28).656

In the preceding chapters I have endeavoured to develop many of these ideas and experiences in terms of
a felt-phenomenology, in order to explain better the nature of our relationship to the world around us: that
it is an immersive, immiscible, and reciprocal one, in which we touch and are touched, affected and
effectuated in manifold ways.

This process began by elucidating the explicit importance of touch and the body (Leib), in the way we
literally make sense of sentience: of agency, reality and being-in-the-world. This goes beyond an
understanding of touch in the narrow cutaneous sense, and extends to include our somatic senses. I
extended this notion further by introducing the concept of haptic-visuality and synaesthetic perception to
explain how vision (and our other senses) may be considered tactual, and how our sensory perceptions are
felt in, with and through our felt/feeling bodies. This in turn enabled me to advance a more holistic and
reciprocal understanding of perception as embodied, embedded, extended and enactive beings (4E). This
includes how we are touched or affected by our environment, and how our emotional disposition
(mood or attunement) affects the ways in which we encounter and perceive architecture. Through the
notion of traces, I illustrated the role tactful materials can play in the recording of time and the
development of character that come to shape and support our beliefs (about a person, place or situation):
how knowing the hermeneutical background of something can irrevocably influence our perception of it
and our engagement with it. These various threads are woven together in the concept of atmospheres as a
felt-phenomenon.

In the final analysis, it is because of the atmosphere that we are always in touch with our environment;
always perceiving haptically (empathetically, synaesthetically, and sensorially); and always affected by, and
attuned to, our contextual (sociocultural, historical, meteorological) surroundings. It is precisely the result
of this constant immersion within the medium that it is often forgotten – perceived in, rather than
perceived with (Ingold, 2011, pp. 134-135) – but this seeing through it does not mean that its significance
or influence should be overlooked. On the contrary, an awareness and understanding of the influence of
atmospheres in our perception and inhabitation of architecture is of paramount importance and should be
taken seriously (Böhme 2013a: 27). We therefore have a responsibility to engage actively with a felt-
phenomenology of architecture – one that is quintessentially more-than visual – if we hope to penetrate
the superficiality of scenography and develop more meaningful, sustainable and emotionally durable
relationships with our built environment: a touching architecture.

656 For a variation, see also Frampton (1981), and more recently, Mallgrave’s description of the “tactile sense”
(Mallgrave, 2011, p. 203).
Figure 117 - Atmosphere: a haze of candlelight illuminates the interior of Zumthor's Bruder Klaus Chapel, drawing out the crumbly textures of the concrete walls and sending wisps of smoky beeswax into the cold air
Source: author
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As to our project 137_Dominus Winery, unfortunately, we are not able to help you due to our internal policies.

We would much appreciate if you could send us the layout of the text including the sent images before it goes to print. Thank you very much in advance.

Best wishes,

Judith

Judith Opferkuch
Communications Manager
Herzog & de Meuron
Rheinschanze 6, 4056 Basel, Switzerland
Direct +41 61 385 5745, General 5757, Fax 5758
From: Anthony Brand [mailto:abra132@aucklanduni.ac.nz]
Sent: Dienstag, 25. April 2017 00:31

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Kindly Seeking Permission for Doctoral Thesis
13 messages

Anthony Brand <abra132@aucklanduni.ac.nz> 23 November 2016 at 21:24
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6 attachments

zumthor Bregenz sketch 1_small2.jpg
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Atelier Peter Zumthor & Partner

Architektur, Nutzungskonzepte
Dear Anthony

I will gladly ask Peter for his permission but this will take some time since he is traveling a lot at the moment. In order to do so I need to know more about your thesis. Could you please send me an abstract and the text passages related to Peter Zumthor's work? I then hope to give you an answer before Christmas. Hope this works.

Best regards,
Nina

On 23.11.2016, at 17:51, Atelier Peter Zumthor & Partner Sekretariat <arch@zumthor.ch> wrote:

Anfang der weitergeleiteten Nachricht:

Von: Anthony Brand <abra132@aucklanduni.ac.nz>
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Permission
Marina Strub <marina.strub@zumthor.ch>  
To: Anthony Brand <abra132@aucklanduni.ac.nz>  
7 March 2017 at 22:40

Atelier Peter Zumthor & Partner

Architektur, Nutzungskonzepte
CH-7023 Haldenstein, Süßwinkel 20
Tel. +41 (0)81 354 92 73

Dear Anthony

Thank you for sending the documents and informations about your work. We finally got the opportunity to go through this with Peter Zumthor and ask him about your request to use some of the images from his book. He agreed on giving you the permission to use the images for your thesis. (He did not sign the paper but you can use this E-Mail as proof if required).

All the best for your thesis and with best regards from Switzerland

Marina Strub

---

On 24 Dec 2016, at 03:50, Anthony Brand <abra132@aucklanduni.ac.nz> wrote:

Dear Nina,

Apologies for the delay - it's the end of the academic year over here and things are all quite hectic.